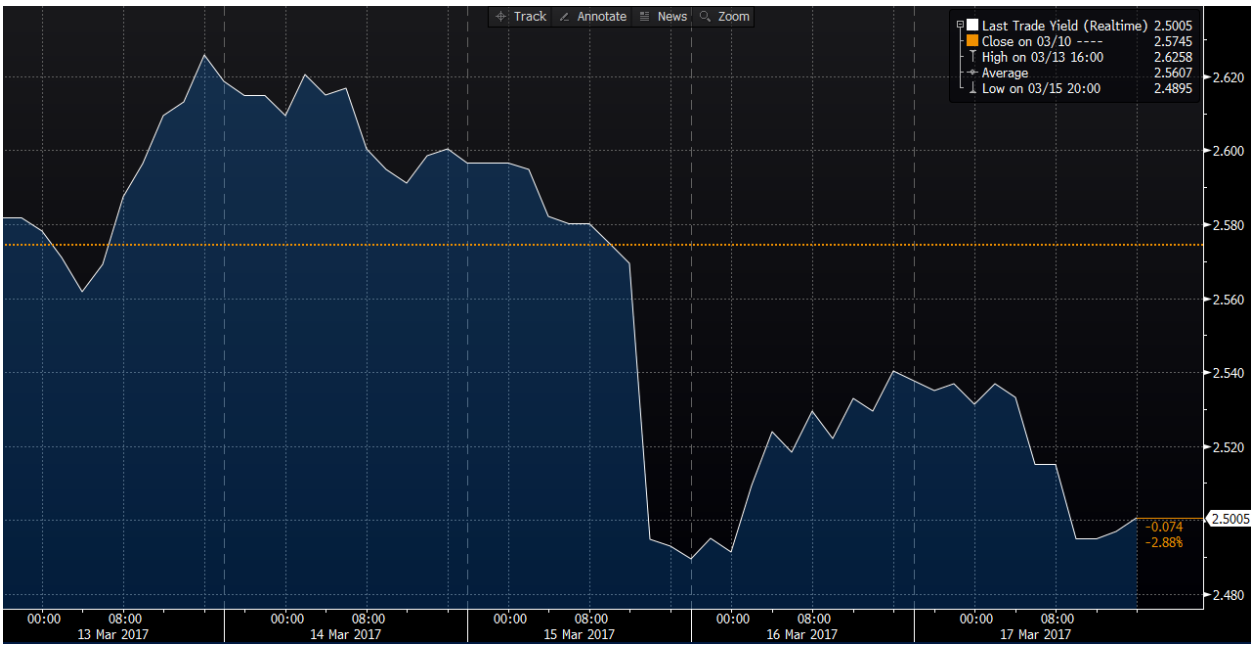
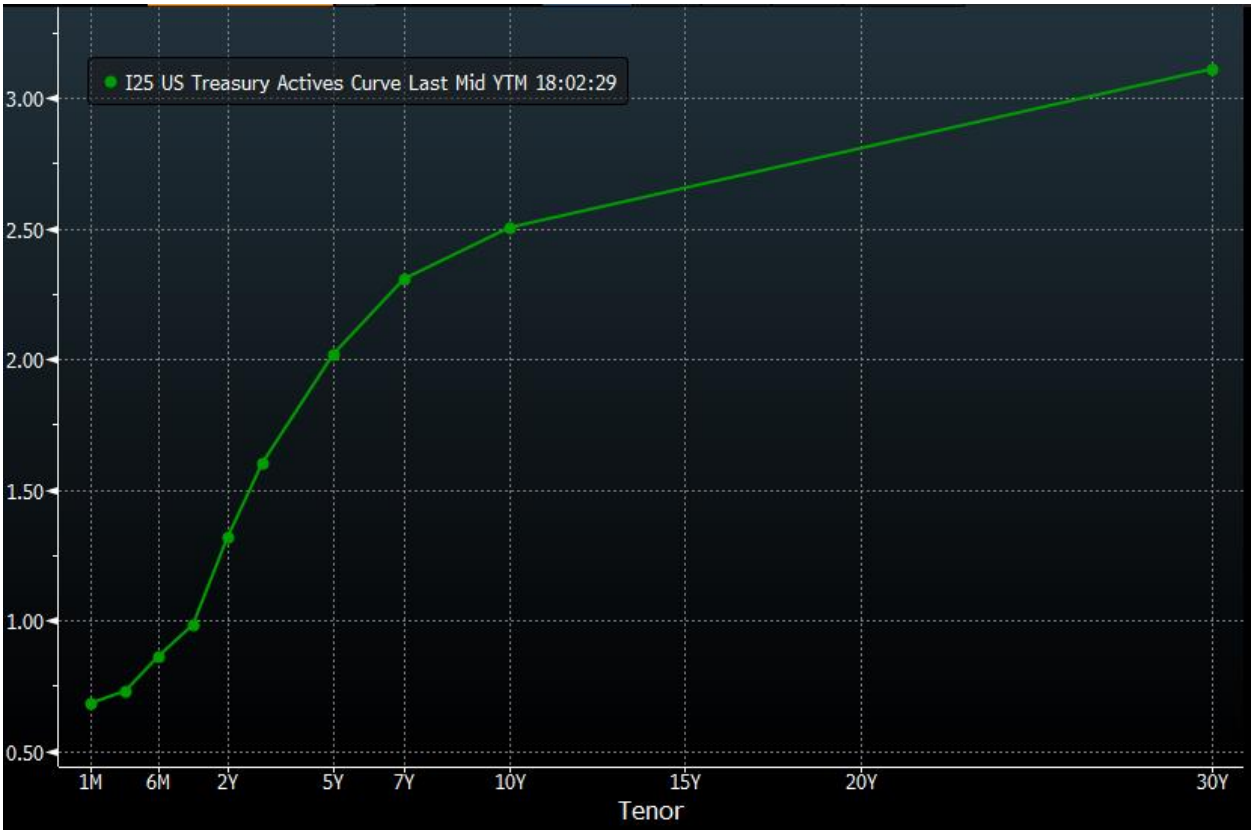
Bond Report

This past week, the main concern of the bond market was pricing Wednesday's rate hike as well as reacting to unmet, aggressive expectations. On Monday, 2 year yields were driven to their highs since 2009, rising 1.7 basis points. The trend continued upwards for both the 10 and 30 year Treasury notes, both reaching highs since 2014 and 2015 respectively. The trend has continued upward since last week, pricing the investing public's certainty of an interest rate hike on Wednesday. Tuesday, the first day of the FOMC meeting, led the yields of Treasury Notes to start to converge together in spread, in light of the following day's decision. OPEC also released data indicating that Saudi Arabia had begun producing over 10 million barrels a day again in February, lowering oil futures. This spiked demand in the Treasury market and gave more insight to the spread adjustment between the 2, 10 and 30 year notes. The 2 year note was the only yield that rose, a total of 2.2 basis points, which is expected from the shortest maturity notes prior to an expected rate hike. The 10 and 30 year yields fell 1.5 and 2.2 basis points respectively. Wednesday, the FOMC meeting met investor expectations of a rate hike of 25 basis points on the Federal Funds rate. The most important takeaway from the meetings closure was Yellen's confirmation of a 3 interest hike year, which investors were slightly thrown off from because a more hawkish approach was expected. This over expectation was seen clearly with a 6.9 basis point drop in the 2 year note, and most notably, a 9.4 basis point drop in the 10 year Treasury note. This was just two days after reaching a high of 8 years. The 30 year note also took a significant drop of 7.2 basis points. On Thursday, yields rebounded upwards normalizing the reaction from the day prior. Yields rose only a couple basis points each, still showing the effect of the interest rate hike on the overall confidence in the market and economic conditions. Friday, rates fell back to where they found themselves on the end of Wednesday's trading day. The market is still trying to price the unmet expectations of a more aggressive monetary approach by the fed. Overall, during the week, the 2 year Treasury note yield closed 2.4 basis points lower from the beginning of the week at 1.316%. The 10 year yield finished the week 8.1 basis points down, closing at 2.506%. The 30 year note yield closed at 3.111%, a total of 4.9 basis points down.





What's next and key events

Next week, we can expect to see prices reflect last week's news as the market closed with significant volatility on Friday. Some key events to watch include the release of adjustments to the Current Account on Tuesday, which is expected to rise from $113 Billion to $128.1 Billion. The significance stems from macroeconomic outlook and further interest rate hikes. While the Fed did clarify on a 3 hike year, inflation raises and expected inflation from the Trump Administration and its policies could affect that choice. Janet Yellen is also presenting a Keynote speech in front of the Federal Reserve Community Development Research Conference on Thursday, which we can expect further elaboration on her past decision and gain more insight on her perspective future expectations, beyond those given last week. These key events should not create much additional volatility in the market. Other notable events include Bloomberg's weekly CCI which tracks confidence of consumers, which could signify how the rate hike was taken from uncertainty to implementation from last week prior.

Macroeconomic Overview

	Index	Weekly % Change	YTD % Change
SPX Index	SPX Index	0.24%	6.23%
INDU Index	INDU Index	0.06%	5.83%
CCMP Index	CCMP Index	0.67%	9.62%
RTY Index	RTY Index	1.92%	2.53%
VIX Index	VIX Index	-3.26%	-19.66%

Domestic

Equity markets finished in the green this week following an anticipated rate hike conducted by the Federal Reserve. The Federal Funds target was moderately increased by .25%, and establishes a new target range of .75 to 1.00%. As rate movements reflect underlying economic assumptions, this increase comes in the wake of strong employment data, increased inflation expectations, and overall economic output. Unemployment rates dropped in February to roughly 4.5%, according to analysts at T. Rowe Price, and guidance from Chair Yellen indicated that inflation is closer to their 2% target, and may even exceed that target. However, there is a conflict between Congressional guidance and those of analysts. President Trump iterated that the administration's "America First" plan would catapult the economy into a 3 – 3.5% growth arena, but analysts provide an ulterior outlook. T. Rowe Price analysts guide that these estimates are "probably not realistic."

Rate hikes are usually in response to climbing inflation rate expectations. In an environment where expectations are quickly climbing, hikes will typically offset this in order to prevent the economy from moving too fast. With the current inflation outlook provided by Chair Yellen and her remarks concerning the durability and resilience of the economy, a more nuanced outlook applies to the future pace of the economy. Contained inflation expectations and low targets indicate that the Fed has room to normalize rates gradually since there is no sign of increased economic friction.

The direct impacts of the hike are seen positively in the equity markets with the Russell 2000 recording this week's high. Analysts at Edward Jones indicate that equities have shown historically large gains in the three years following rate hikes since 1986, showing a 9.2% return. This rate is comparable to the Nasdaq Composite's YTD return and continued gains throughout the rest of the major indexes.

The Fed provided guidance for the rest of 2017 leaning towards two more rate hikes by year's end. As long as strong economic data justifies the FOMC decision, equity markets will continue to price in expected increases.

Next Week Ahead: Information release is expected to be light this week.

- Existing home sales data – Wednesday
- New home sales data – Thursday
- Chair Yellen speech - Thursday

Foreign Markets

	Index	Weekly % Change	YTD % Change
BE500 Index	BE500 Index	1.50%	4.51%
SXXP Index	SXXP Index	1.36%	4.68%
DAX Index	DAX Index	1.10%	5.35%
UKX Index	UKX Index	1.12%	3.95%
CAC Index	CAC Index	0.72%	3.43%
NKY Index	NKY Index	-0.42%	2.13%
SHCOMP Inde	SHCOMP Index	0.77%	4.31%
SZCOMP Inde	SZCOMP Index	0.80%	3.08%

Europe: The Monetary Policy Committee of England held a meeting this week in order to vote on rate movements. The BOE is reportedly closer to rising rates than the market had previously indicated. Underneath the noise surrounding Brexit impacts, the English economy seems to be undergoing rebounded inflation expectations. With pressures beginning to revert upwards and the recent legislation kicking off the UK's withdrawal from the EU, the need for monetary policy changes is coming to fruition. During their meeting this week, members of the BOE have indicated that they would be in favor of hikes given increased inflation expectations. With a rate hike heading into the process of officially leaving the EU, the BOE could set the UK up for increased economic expansion.

Asia:

The BOJ, along with the BOE, held monetary policy meetings this week. BOJ news stays relatively quiet as their economy still doesn't support rate hikes. However, China influenced repo rate upwards by ten basis points in order to influence foreign exchange stabilization with the USD/CNY. In addition, they voted to increase short term rates. Despite decisions in Japan and the state of "limbo" in the UK, rate movements in China indicate a global slowdown in excessive monetary accommodations.

This Week Ahead:

- UK inflation data – Tuesday
- BOJ minutes release from most recent monetary meeting - Tuesday

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March, 17, 2017

FORTINET: FTNT

AlexandreTHIAM

Sector: Technology
Industry: Cybersecurity
Current Price: $37.13
Target Price: $50.32

Fortinet was founded in early 2000 by Ken Xie in Sunnyvale, California where he also based the headquarters. Ken Xie is said to be a visionary business man that already founded NetScreen. Both of these companies are network security providers mainly focusing on cyber-attacks. Thanks to his long experience within cyber security, Xie built and gathered a solid management team. The company is focusing on "top-rated" network and content security, as well as products that share intelligence via networks. The company count a majority of the fortune 500 as their customers, which proves the reliability of the service provided.

BUY

Current Price:	$37.13
Target Price:	$50.32
Market Cap:	$6.50B
Debt Rating:	No debt
P/E:	42

Thesis:

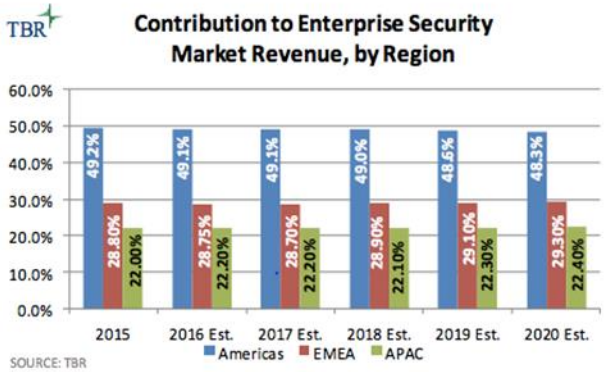
Cyber terrorism was one of the main topic and issue addressed by both Hilary and Trump during their campaign. The candidates said during national debates that counter cyber terrorism and espionage was one of their priorities. This attention benefited most of the industry with stock prices gaining ground. I believe that FTNT is a performing company within booming industry. Therefore I see a lot of upside potential for Fortinet. The company might currently be slightly underpriced, but the upside is about what the company is doing now, and the fact that FTNT is first in line to benefit from a growing industry.

Catalysts:

- Short Term(within the year): Earnings coming next month (strengthened guidance) and the new FortiGate release expected for 2017.
- Mid Term(1-2 years): The stock price would reflect the increasing demand and well-being of the industry being one of the leaders.
- Long Term(3+): Innovation and patent acquisition payoffs would most likely be factored in the stock price in the next 5 years.

Industry Outlook

The cybersecurity industry is gaining ground as well as popularity throughout the years, but still not highly regarded on an investors standpoint. However, the industry outlook looks promising and shows a lot of upside potentials for the market participants. In 2004, the global cybersecurity market was roughly worth $3.5B and is now worth approximately 35x that amount with $122.45B. This industry is known as one of the fastest growing one among the tech sector. Cybersecurity business gain in importance and his driven by the increase in security breaches caused attacks and malware viruses. In addition, the growing needs security of Internet of Things as well as Bring Your Own Device caused the users to seek better protection against hack risk. In 2015 the damages were valued at $3 trillion and is expected to double to $6 trillion by 2021. The CAGR for the industry, which has been increasing at a fast pace so far, is expected to grow at its highest pace for the period 2016-2021. North America represent the highest proportion of the markets and is expected to remain the major market in a near future due to a large presence of cyber security provider in the area.



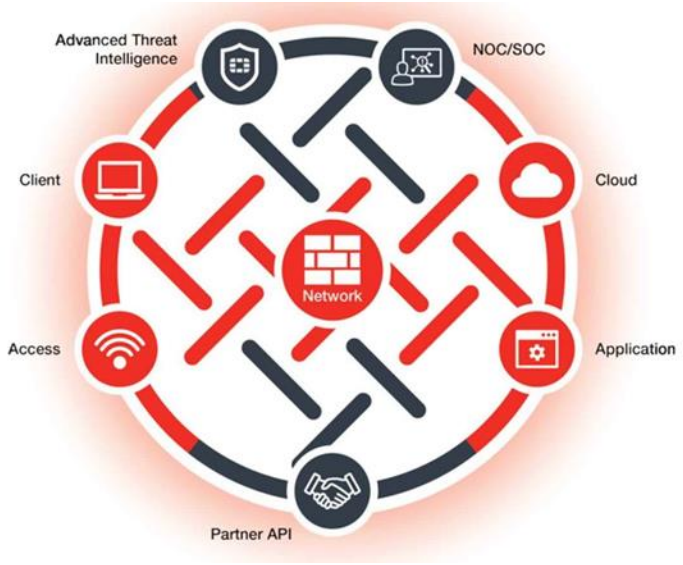
Furthermore, North America represent the region the adopted and endorsed cybersecurity at an early stage. According to Markets and Markets the early adoption is not the only case as "The report also encompasses different strategies, such as mergers & acquisitions, partnerships & collaborations, business expansions, and product developments, adopted by major players to increase their market share." The Job market in this industry looks promising too, with a forecasted 1.5 million job openings by 2019 up from 1 million last year. Overall, the demand for cybersecurity experts will rise to 6 million. Even more striking, the unemployment rate is currently near 0% and is expected to remain at that level over the next 5 years.

Business Model

Fortinet's business model, is based on mass market model with no preferential or differentiation between its customers. In other words the company is targeting, individuals as well as companies. The companies is also not focusing on a particular type of company, and targets from small to large cap as well any different industries (Finance, telecommunications, retail, education etc.). The business model comprehends designing and developing the products and services. Fortinet subcontracts the manufacturing of its products to foreign contract manufacturers including Flextronics International, Adlink Technology, and Taiwan-based manufacturers. Once the products is built, they are delivered to logistics partners located in strategic points in Taiwan or California. In those facilities Fortinet runs = quality-control checking and the packaging takes place.

The company's main components are derived from different suppliers and manufacturers, including CPUs ,chips and solid-state drives from Intel, Samsung etc.

The channel of distribution used by Fortinet is rather complex. The company is selling the products offered to distributors using exclusive networks (Ingram Micro, Fine Tec Computer and Arrow Electronics). These distributors resell these products to B2B focused and networking security resellers such as Tech Data and Westcon. From that point the resellers sell the products/services to end-customers, which are mainly enterprises, service providers, and the government. The channel is also encompassing a sales team that aim end customers directly via the website and social Medias.



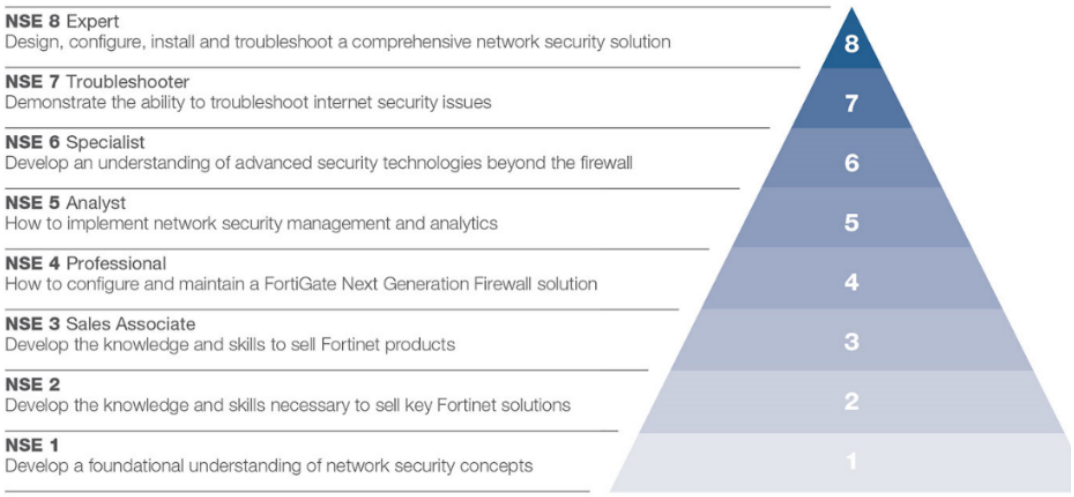
Although the company has a mass market model, Fortinet has key partners that unsure the wellbeing of operations. The company has alliance partners such IBM, HP, Microsoft, that are helping the company building and developing more efficient solutions. The company also has Managed Security Service Providers such as BAE systems, EarthLink Business, Trustwave etc. that furnish system integrators, platforms, and support as well as selling Fortinet's service to their customers.

Products/Services:

Services- *FortiGuard* security which is a subscription services that offers antivirus,intrusion prevention, web filtering, anti-spam, vulnerability management updates, and application controls.

FortiCare is a technical support services designed for software updates, Internet access to technical content, and hardware support.

Fortinet is also providing 8 different training courses that aim at forming the employees of the future with the required level of understanding and expertise of cybersecurity.



Products – Fortinet as numerous products, each with a specific allocation. The company offers Firewalls through its *FortiGate* line of products. The firewalls are offering the clients an "End-to-end security across the full attack cycle" over the entire network within which it is deployed. The company sells both high-end and mid-range firewalls adapting its products to the carious demand of customers. The price range for the firewalls is very wide with prices going from $850 to $215,000.

The *FortiSandbox* by Fortinet is a top-rated proactive advanced threat and breach detectors. This product is extension of the firewalls offered by the company. In other words, this product is a advance highly performant anti-virus that enhance the threat detection using a flexible easy-to-use deployment. The Sandbox is available as a physical or virtual as well as cloud based form.

Enterprise-class WiFi is a internet router sold by the company that offers a secured wireless LAN solutions to clients. The Fortinet WLAN box is said to be the best-in-class security to protect connected devices and applications.

Innovation:

Being part of a highly innovative industry, Fortinet has to strive in order come up efficient and quality products. Security innovation is a stone pillar of competitiveness within the technology sector. The company reached the milestone of 300 different patents in 2016. The CEO Ken Xie said "When we founded the company 16 years ago, we foresaw the move to IoT, BYOD, and the cloud. Our strong foundation of innovation and unprecedented patent portfolio has enabled us to stay ahead of the ever-evolving threatscape. We were the first to identify the internal segmentation trend two years ago, which is now gaining significant momentum in the market. Our Security Fabric uniquely positions us to address the security challenges faced by enterprise customers today. We will continue to invest in technologies to help power our Security Fabric and that enable our customers to implement innovative security strategies for seamless, comprehensive threat protection across the expanding attack surface."

The management which has proven efficiencies, are incline to pursue innovation mostly through acquisition (Meru Network, AccelOp etc.) in order to grow the business. The company is currently viewed as the global leader in the high performance cybersecurity solutions and also as a pioneer in innovation creating cost effective, reliable products. The company continues to lead the industry thanks to its broad differentiation base of products or services. One main advantage is that in this particular industry having a broad differentiation model is orienting the company towards a more vertically integrated model. Indeed, Fortinet is in the position to offer a multitude of not only services but also products in completion of a sell. For instance after selling a FortiGate firewall, Fortinet can offer a FortiSandBox (product) for malware detection, and also FortiOS in order to siplimfy the use of the equipment via one handy application.

Financials/valuation:

As shown in the industry outlook, Fortinet is doing most of its sales in North America with 42.1%. The remaining revenues are generated in the EMEA with 37.4% and Pacific Asia with 20.5%. This is line with the industry expectations of the geography for the industry. The breakdown by segments shows that as of 2016, the company has generated 57.0% ($727.3 million) of its revenue through services against 43% ($548.1 million) for the products which represents 262.5% of total revenue. As shown on the table below, the company has a low cost of revenue for the services of $128.9 million which implies a 82.30% gross margin whereas the cost of products (higher due to costs associated with the production absent for services) were $209.0 million which shows a 60.10% gross margin

In Millions of USD except Per Share	FY 2011		FY 2012		FY 2013		FY 2014		FY 2015		FY 2016	
12 Months Ending	12/31/2011		12/31/2012		12/31/2013		12/31/2014		12/31/2015		12/31/2016	
Revenue	433.6	100.0%	533.6	100.0%	615.3	100.0%	770.4	100.0%	1,009.3	100.0%	1,275.4	100.0%
Services	220.3	50.8%	274.0	51.4%	329.7	53.6%	409.8	53.2%	532.5	52.8%	727.3	57.0%
Product	197.4	45.5%	248.9	46.7%	278.0	45.2%	360.6	46.8%	476.8	47.2%	548.1	43.0%
Ratable Product and Services	15.9	3.7%	10.6	2.0%	7.5	1.2%	–		–		–	
Cost of Revenue	113.6	100.0%	147.4	100.0%	180.6	100.0%	231.0	100.0%	286.8	100.0%	337.8	100.0%
Product	73.2	64.4%	94.0	63.7%	114.6	63.4%	151.3	65.5%	190.4	66.4%	209.0	61.9%
Services	35.5	31.2%	50.7	34.4%	64.1	35.5%	79.7	34.5%	96.4	33.6%	128.9	38.1%
Ratable Product and Services	4.9	4.3%	2.8	1.9%	1.9	1.1%	–		–		–	
Gross Profit	320.0	100.0%	386.2	100.0%	434.7	100.0%	539.4	100.0%	722.5	100.0%	937.6	100.0%
Services	184.8	57.7%	223.4	57.8%	265.6	61.1%	330.1	61.2%	436.1	60.4%	598.5	63.8%
Product	124.2	38.8%	155.0	40.1%	163.4	37.6%	209.3	38.8%	286.4	39.6%	339.1	36.2%
Ratable Product and Services	11.0	3.4%	7.9	2.0%	5.6	1.3%	–		–		–	
Gross Margin	–		–		–		–		–		–	
Services	83.90		81.50		80.60		80.50		81.90		82.30	
Product	62.90		62.30		58.80		58.00		60.10		61.90	
Ratable Product and Services	69.10		74.00		74.60		–		–		–	

Overall the mean of the two margins indicates a company gross margin of 73.5%/. On the other hand, the operating expenses skyrocketed the last three years due to an increase in SG&A and now account for 70.3% of total revenue (SG&A went from 42% to 56%). This bring down the operating margin to 3.2% (73.5% - 70.3%) from 20.5% in 2011. This is explain by the expansion strategy of Fortinet through acquisition of products, which logically increases the SG&A expenses.

Compared to its peers, Fortinet has been showing thoughout the years that it was without the shadow of the doubt one of the industry leaders. The mid-cap company ($6.50 billion) valuations is still showing signs of skepticism on the behalf of investors. Indeed despite being the industry leader the company is still having a rather low P/E of 42.24 against a peer average of 50.15. Yet, the sales growth YoY are at 26.37% way above industry average of 15.58%. The 3 most direct competitors (Palo Alto, Proofpoint, and FireEye) are showing

higher growth which probably encouraging investors doubt. But we further research it appears that these company are capitalizing a prior projects when FTNT is still in the process of focusing on future cash flows generated by new project. This might show a backlog of revenue that the company will catch up a little further down the line. On the other, the EBITDA margin should bring joy to investors as FTNT margin stand at 8.55% against the industry 6.79%. However the direct competitors, PANW, PFPT, and FEYE that had better sales growth all have negative margins with -9.79%, -10.71%, and -40.98% respectively. In line with the high job creation expected in the entire industry over the next 5 years, FTMT 1-yr employee growth is as 16.10% against an average of 5.52%. The R&D / Sales is at 14.35% considerably lower than industry at 21.11%. This is consistent with the ambition of Fortinet to allocate capital in R&D (to innovate) but also acquiring companies and patents. Hence the reason why Fortinet Cash on hand (Cash equivalent) has always been increasing going from $90 million if 2007 to $1,085.5 million in 2016. The company has been raising its most liquid assets in order to be able to quickly purchase interesting products or companies if there is a sudden opportunity. All the above figures are shown on the table below.

Equity Valuation | Op Stats | Profitability | Balance Sheet | ESG

	Name (BI Peers)	Sales Growth Yoy (%)	EBITDA Margin (%)	Employees 1 Yr Growth	Revenue 1 Yr Growth	License Revenue 1 Yr Growth	intenance Revenue 1 Yr	Gross Profit 1 Yr Growth	Operating Profit 1 Yr Growth	R&D/Sales
	Average	15.58%	6.79%	5.52%	15.58%	11.99	7.42	16.32	10.74%	21.11%
100)	FORTINET INC	26.37%	8.55%	16.10%	26.37%	14.96	--	29.77	87.90%	14.35%
101)	PROOFPOINT INC	41.48%	-10.71%	30.76%	41.48%	42.21	--	47.18	0.98%	26.23%
102)	PALO ALTO NETWORKS INC	48.54%	-9.79%	43.91%	48.54%	36.16	--	48.20	-47.51%	20.62%
103)	FIREEYE INC	14.63%	-40.98%	-6.45%	14.63%	-29.87	--	13.47	18.63%	39.15%
104)	IMPERVA INC	12.87%	-18.98%	7.58%	12.87%	--	--	12.80	-23.62%	23.60%
105)	SYMANTEC CORP	-9.00%	24.78%	-42.11%	-9.00%	0.78	-9.33	-7.56	86.48%	20.78%
106)	TREND MICRO INC	6.13%	34.52%	--	6.13%	--	--	5.68	10.92%	3.99%
107)	CHECK POINT SOFTWARE ...	6.84%	49.79%	--	6.84%	3.09	3.05	6.86	1.50%	10.24%
108)	MOBILEIRON INC	9.80%	-37.35%	1.30%	9.80%	--	--	10.27	20.79%	41.11%

Conclusion:

All in all, the business and operations of Fortinet are rather easy to understand for a tech company. On top of this the ambitions as well as the direction the company is taking are clear, Fortinet wants to head north. The sales level as well as financials are showing that the company is well managed, therefore stable. The strategy namely the innovation and acquisition clears indicates a real upside potential.

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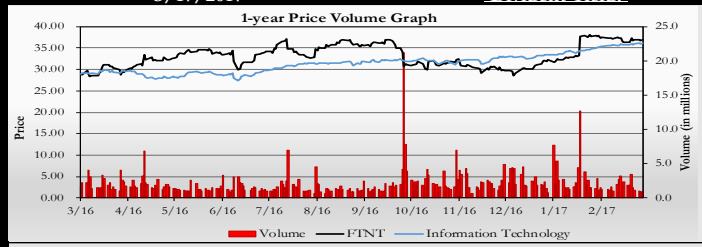
Fortinet, Inc. (FTNT)

CENTER FOR GLOBAL FINANCIAL STUDIES

BULLISH

Analysis by Alexandre Thiam	Current Price:	$37.13	Intrinsic Value	$45.17	Target 1 year Return: 36.43%
3/17/2017	Divident Yield:	0.9%	Target Price	$50.32	Probability of Price Increase: 98.8%



Description

Fortinet, Inc. provides cybersecurity solutions for enterprises, service providers, and government organizations worldwide.

General Information

Sector	Information Technology
Industry	Software
Last Guidance	November 3, 2015
Next earnings date	NM
Estimated Country Risk Premium	2.75%
Effective Tax rate	13%
Effective Operating Tax rate	33%

Market Data

Market Capitalization	$6,509.63
Daily volume (mil)	3.09
Shares outstanding (mil)	175.32
Diluted shares outstanding (mil)	176.34
% shares held by institutions	62%
% shares held by investments Managers	53%
% shares held by hedge funds	14%
% shares held by insiders	14.15%
Short interest	2.51%
Days to cover short interest	1.81
52 week high	$38.33
52-week low	$27.95
Levered Beta	1.26
Volatility	34.22%

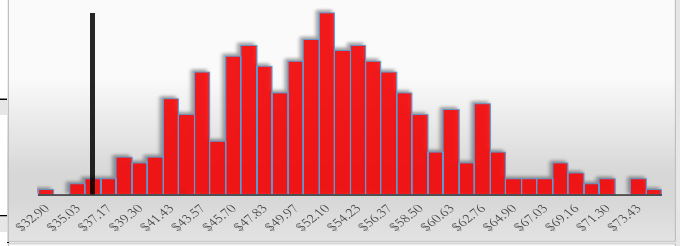
Past Earning Surprises

Quarter ending	Revenue	EBITDA
12/31/2015	-0.89%	-61.28%
3/31/2016	2.73%	-80.77%
6/30/2016	0.13%	-86.39%
9/30/2016	-1.36%	-64.09%
12/31/2016	4.68%	-17.37%
Mean	1.06%	-61.98%
Standard error	1.1%	12.1%

Peers

FireEye, Inc.
Palo Alto Networks, Inc.
Check Point Software Technologies Ltd.
Symantec Corporation
Imperva, Inc.
Barracuda Networks, Inc.
SecureWorks Corp.
Red Hat, Inc.

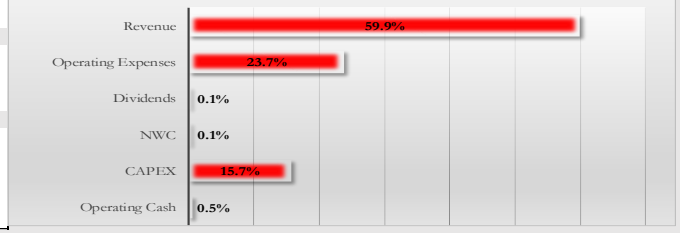
Target Price Distribution--P(price↑)=98.8%



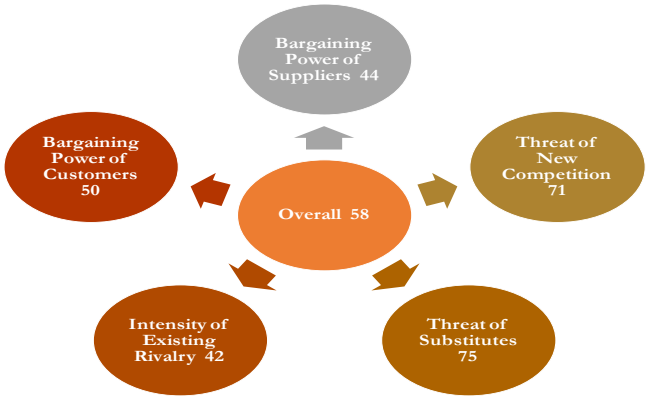
Management	Position	Total compensations growth	Total return to shareholders
Xie, Ken	Founder, Chairman and Chief	37.53% per annum over 5y	6.23% per annum over 5y
Xie, Michael	Co-Founder, President, Chief	40.91% per annum over 5y	6.23% per annum over 5y
Del Matto, Andrew	Chief Financial Officer	-37.52% per annum over 1y	1.66% per annum over 1y
Whittle, John	Vice President of Corporate	33.92% per annum over 5y	6.23% per annum over 5y
Jensen, Keith	Chief Accounting Officer, Vi	N/M	N/M
Perche, Patrice	Senior Executive Vice Presid	N/M	N/M

Profitability	FTNT (LTM)	FTNT (5 years historical average)	Industry (LTM)
ROIC	24.8%	255.01%	12.61%
NOPAT Margin	12%	29.04%	17.5%
Revenue/Invested Capital	1.99	8.78	0.72
ROE	11.3%	27.32%	13.88%
Adjusted net margin	12%	28.82%	15.5%
Revenue/Adjusted Book Value	0.93	0.95	0.90
Invested Funds	**FTNT (LTM)**	**FTNT (5 years historical average)**	**Industry (LTM)**
Total Cash/Total Capital	61.2%	58.4%	53%
Estimated Operating Cash/Total Capital	24.3%	20.6%	N/A
Non-cash working Capital/Total Capital	-21.2%	-19.8%	-29%
Invested Capital/Total Capital	49.2%	38.4%	66%
Capital Structure	**FTNT (LTM)**	**FTNT (5 years historical average)**	**Industry (LTM)**
Total Debt/Common Equity (LTM)	0.02	0.02	0.13
Cost of Existing Debt	3.74%	3.79%	2.83%
Estimated Cost of new Borrowing	3.92%	3.84%	2.83%
CGFS Risk Rating	B	B	B
Unlevered Beta (LTM)	1.25	1.68	1.09
WACC	7.39%	8.62%	6.84%

Sensitivity Attribution Analysis



Porter's 5 forces (scores are out of 100)



Valuation

Period	Revenue growth	NOPAT margin	ROIC/WACC
Base Year	26.4%	12.4%	3.35
12/31/2017	15.5%	30.3%	6.04
12/31/2018	12.7%	29.8%	5.12
12/31/2019	12.2%	30.5%	4.76
12/31/2020	11.8%	29.0%	4.21
12/31/2021	9.3%	26.9%	3.63
12/31/2022	8.4%	25.5%	3.23
12/31/2023	7.5%	24.0%	2.88
12/31/2024	6.6%	22.6%	2.58
12/31/2025	5.7%	21.2%	2.31
12/31/2026	4.9%	19.9%	2.07
Continuing Period	4.0%	18.5%	1.84

Period	Invested Capital	Net Claims	Price per share
Base Year	$34.50	-$604.15	$45.04
12/31/2017	$136.26	-$987.61	$49.83
12/31/2018	$250.38	-$1,463.75	$55.07
12/31/2019	$465.93	-$1,997.98	$60.49
12/31/2020	$639.73	-$2,536.83	$66.05
12/31/2021	$872.88	-$3,177.51	$72.37
12/31/2022	$1,158.29	-$3,680.86	$78.09
12/31/2023	$1,449.61	-$4,175.00	$83.93
12/31/2024	$1,759.31	-$4,649.70	$89.88
12/31/2025	$2,099.54	-$5,093.50	$95.94
12/31/2026	$2,453.85	-$5,514.64	$102.10
Continuing Period			

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BJORKLUND FUND

March, 16, 2017

Micron Technology, Inc: MU

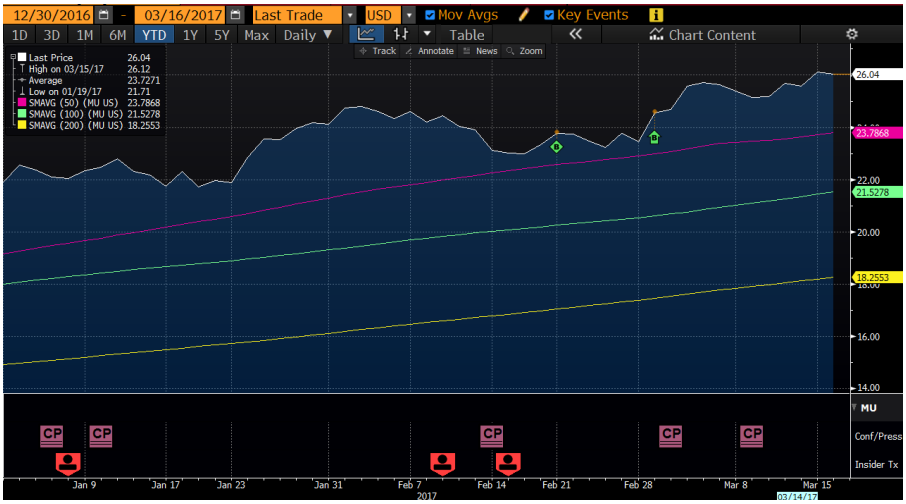
Michael Capozzi

Sector: Technology
Industry: Semi-Conductor Memory Chips
Current Price: 26.04
Target Price: 31.10

Company Description: Based out of Boise, ID, Micron Technology Inc. provides semiconductors systems worldwide. The company operates in four segments: Compute and Networking Business Unit, Storage Business Unit, Mobile Business Unit, and Embedded Business Unit. Their products offered are DDR3 and DDR4 DRAM products, mobile low-power DRAM products, DDR2 and DDR DRAM products, GDDR5 and GDDR5X DRAM products, SDRAM products, and RLDRAM products.

BUY

Current Price:	$26.12
Target Price:	$31.10
Market Cap:	28.715B
Beta:	2.11
WACC:	9.2%



Thesis:

Micron (MU) is ready to release its Q2 2017 earnings report on March 23rd. After a strong Q1, forecasters expect another successful quarter. Micron has benefited from favorable prices, and it shows through their recent increase in margins and earnings. DRAM and NAND prices have significantly improved because of an undersupply of the products in the market. When prices were favorable MU traded in the 30s. With prices starting to go back to that point, MU seems poised to head back to that range. The industry itself has been growing at a consistent rate and the future is bright for semiconductors. With new technology hitting the market every day, Micron will be able to capitalize on these new breakthroughs for years to come.

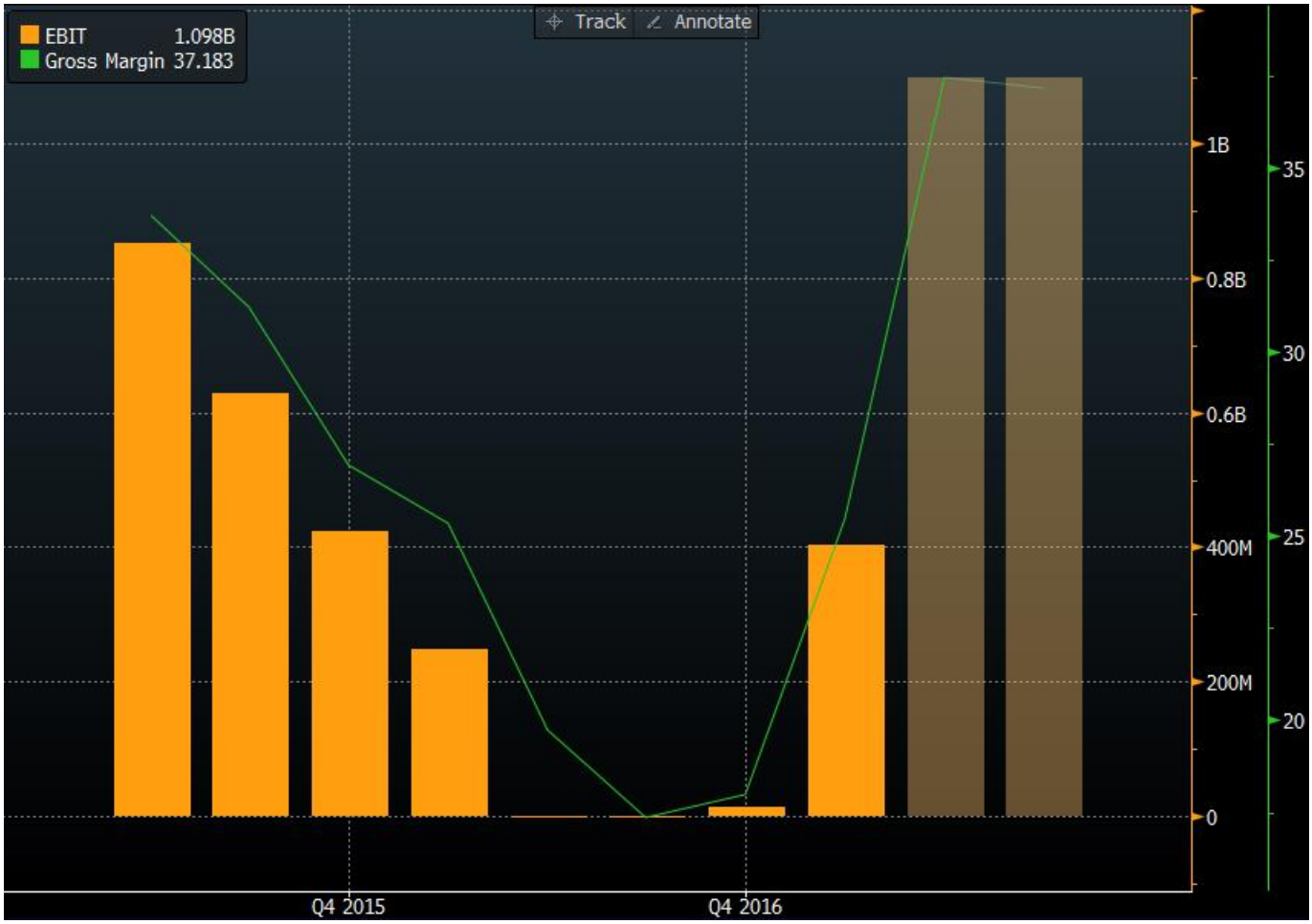
Catalysts:

- Short Term(within the year): Q2 Earnings Report expects a bright outlook for MU
- Mid Term(1-2 years): Improving prices for DRAM and NAND chips will increase margins and growth
- Long Term(3+): The industry is expected to grow at around 30% during the period of 2017-2021

Micron's Q2 Earnings Report:

Since 2014, Revenues, Operating Income, and EBITA, amongst other things, have all decrease significantly for Micron. Revenues have decreased from $16,358M to 13,019M. Gross margins have also decreased from 33.24% to 20.52% during this time. The earning troubles were due to an oversupply of memory chips in the market. Although Micron has experienced successful earning calls for the last four quarters, because of this analysis expect the future to be bright for Micron. On March 23rd, Micron will release its Q2 earning results. Analysists and investors expect positive results for the company once again. The driver behind Micron's recent success has been rising prices and demands for NAND and DRAM chips. DRAM chip prices were up 30% in the fourth quarter of 2016 and saw a similar spike going into the first quarter of 2017. Overall revenues are forecasted to increase to $18,117.4M in 2017, while the EBITDA margin is expected to increase from 26.12% to 43.05%. The company is also expected to once again experience a positive profit margin of $17.92M in 2017. DRAMeXchange, a site that provides current and forecasted prices of memory chips, forecasts DRAM supply to increase 19%, while demand is forecasted to increase 22%. This difference will cause DRAM prices to increase further into 2017. Exhibit A shows the forecasted increase in EBIT and gross margin. The factors discussed will drive both up in 2017 and 2018.

Exhibit A:



DRAM Prices:

DRAM prices are forecasted to increase 30% in 2017. This increase will have a direct benefit on Micron's margins and earnings. In 2015 and 2016, DRAM prices have decreased because a large supply in the market. A decrease in supply and increase in demand in 2017 will ensure higher price tags. Samsung, SK Hynix, and Micron all saw increased revenues in the 3Q of 2016 because of these price shifts.

Table: Global Revenue Ranking of Branded DRAM Manufacturers, 3Q16 (Unit: Million USD)

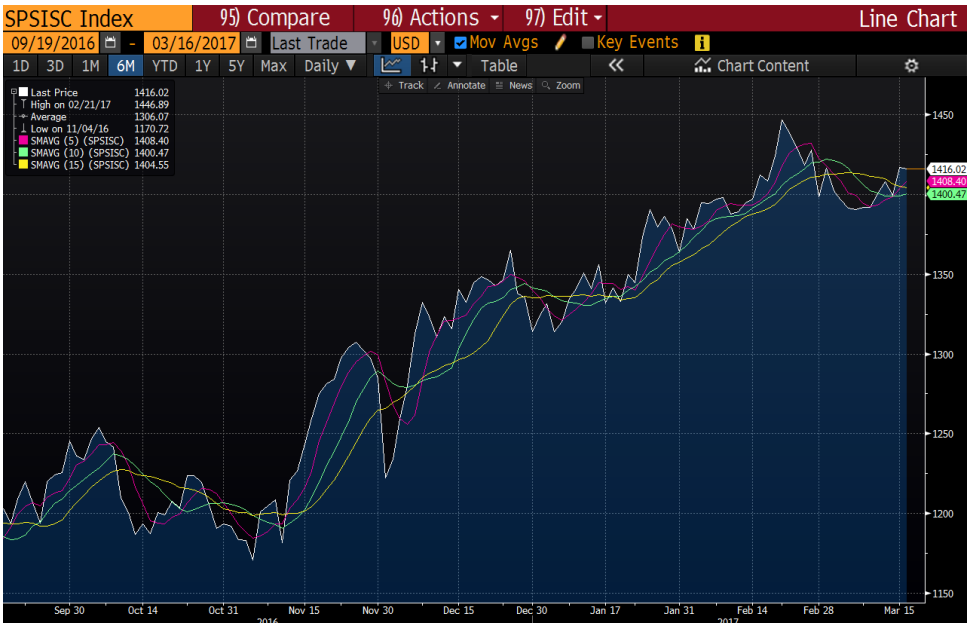
Ranking	Company	Revenue			Market Share	
		3Q16	2Q16	QoQ	3Q16	2Q16
1	Samsung	5,286	4,318	22.4%	50.2%	47.4%
2	SK Hynix	2,617	2,409	8.6%	24.8%	26.5%
3	Micron Group	1,946	1,728	12.6%	18.5%	19.0%
4	Nanya	322	276	16.7%	3.1%	3.0%
5	Winbond	174	163	7.0%	1.7%	1.8%
6	Powerchip	64	93	-31.1%	0.6%	1.0%
	Others	127	114	11.1%	1.2%	1.3%
	Total	10,536	9,101	15.8%	100.0%	100.0%

Note 1: 2Q16 USD$1:KRW$1,162; US$1:TWD$32.39

Note 2: 3Q16 USD$1:KRW$1,119; US$1:TWD$31.69

Source: DRAMeXchange, Nov., 2016

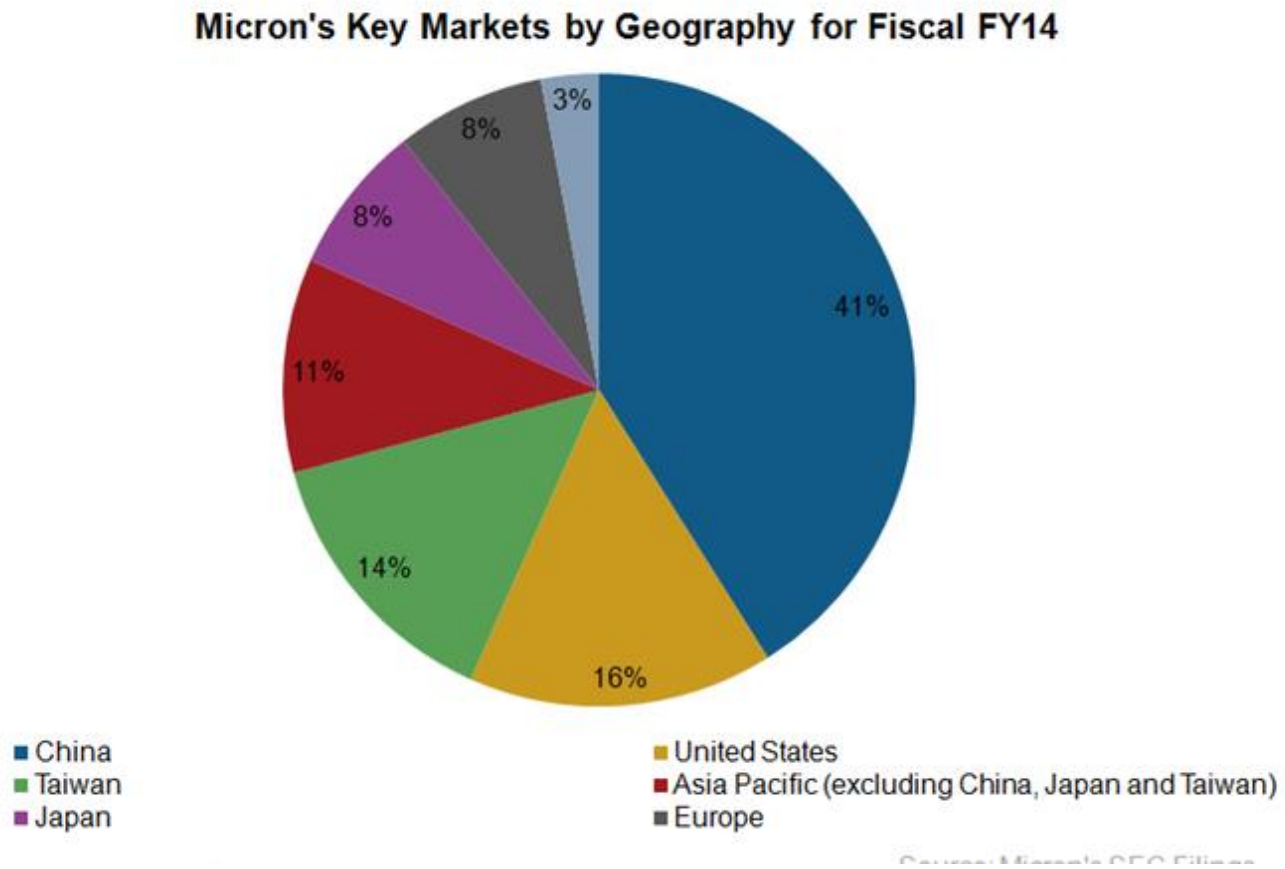
Industry Outlook: Micron is a part of the semiconductor memory chip industry within the technology sector. The industry has seen better returns than the S&P 500 benchmark and analysts predict further growth into 2017. Due to favorable supply and demand trends going into 2017, the industry is predicted to grow. The competitive environment is favorable for Micron. The only main rivals for Micron in the industry are Samsung (OTCMKTS:SSNLF) and SK Hynix Inc. (OTCMKTS:HXSCL). Analysts believe there is plenty of room in the market for Micron to grow despite these competitors. In the last 6 months, the S&P Semiconductor Select Industry index has shown significant growth for the



semiconductor industry. These are also due to the recent favorable pricing trends and demand in the market.

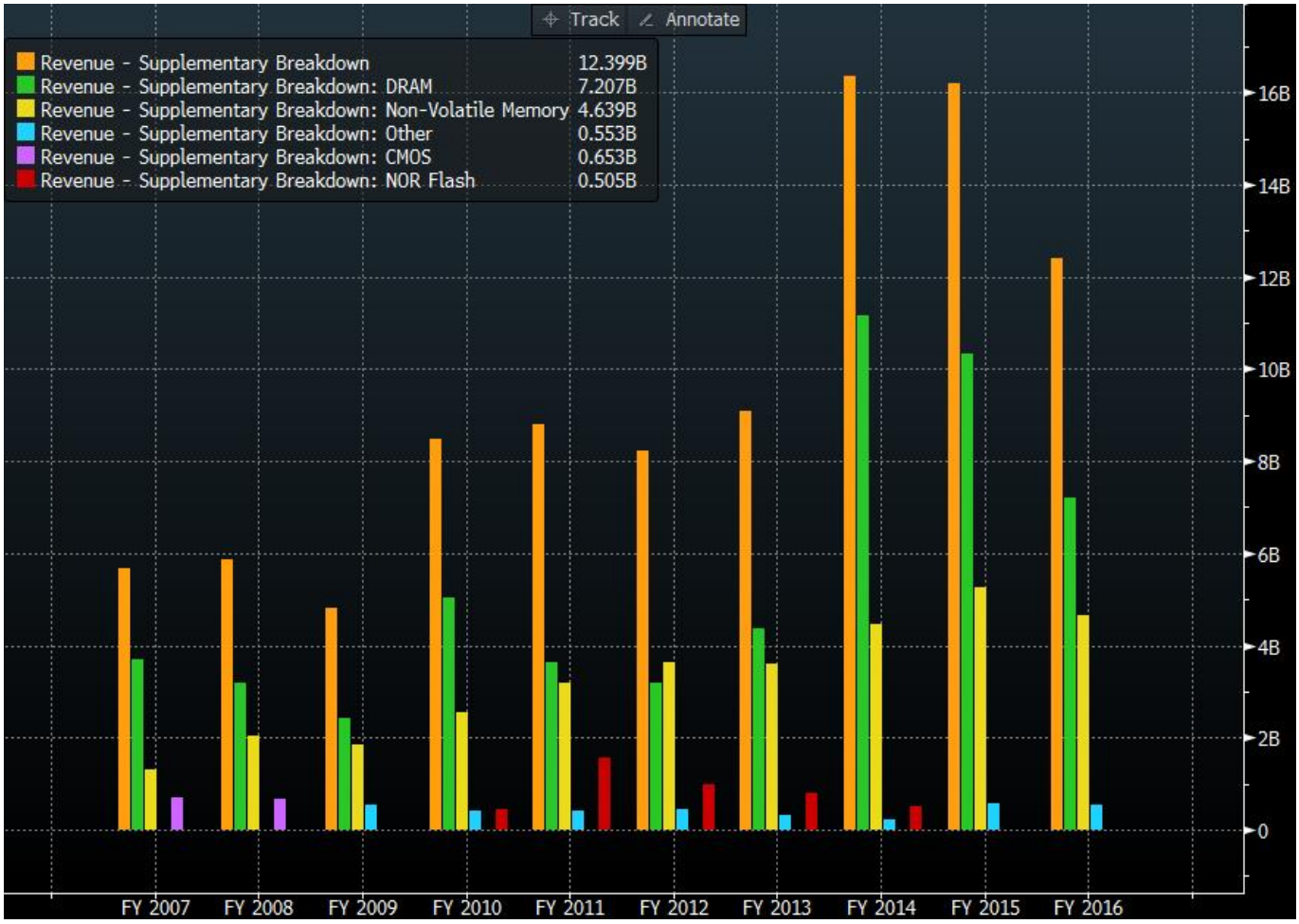
Acquisition:

In 2016, Micron acquired Inotera, a semiconductor company based out of Taiwan. The transaction value was approximately $4B. Micron paid for the acquisition with approximately $2.5B of debt, $1B of Micron's equity to Nanya Technology, and remaining on cash from Micron's balance sheet. The acquisition is predicted to increase gross margins, EBITDA, EPS, and free cash flow. The acquisition will also help Micron increase their market share in Asia. 74% of Micron's revenues are out of Asia. In addition, Asia is a rapidly growing market, so this acquisition should be beneficial for Micron in the foreseeable future.



Products:

Micron sells mostly DRAM products, which stands for dynamic random-access memory, and non-volatile memory products. They are essentially memory chips that are used in phones, desktops, laptops, and various other devices. DRAM products make up 58.1% of revenues, while non-volatile memory products make up 37.4% of revenues. This is why an increase in DRAM prices is so crucial to the success of Micron. In regards to what type of product the memory chips are made for, majority of revenues are from computer & networking business units, storage business units, and mobile business units. Microns largest customers are Hewlett Packard Corporation (HPQ), Intel Corporation (INTC), and Kingston. Together they make up around 30% of Micron's sales. In recent years, Micron has focused more on mobile phone storage. In 2014, Micron acquired Elpida, which scored a huge contract with Apple's iPhone 5.



Profitability:

The entire semiconductor industry was hurt by an oversupply of DRAM products in the market. Micron's margins and earnings were significantly affected, to the point that Micron had a net loss of $276M in 2016. Although forecasters are aware of that DRAM producers have been decreasing inventories, thus increasing the overall price of the product. Forecasters predict a $2,661.6M net income for Micron in 2017. Margins are also on the rise, as displayed in Exhibit B. After disappoint margin results in Q4 2016, margins saw a significant spike in Q1 2017. Forecasters expect strong numbers from the Q2 2017 earnings report.

Exhibit B:

Conclusion:

MU has incredible potential to return to trading in the $30 range. Favorable prices for Micron will help them meet earnings for Q2 2017. Their Q1 results exceeded expectations and forecasters see the same for Q2. The company has the necessary market share to grow in a promising environment. They are poised to expand in a rapidly growing Asian market with their newly acquired companies, Elpida and Nanya. The company is mainly driven on revenues, so these factors discussed should encourage the growth of the stock price.

Current Price: $26.12

Intrinsic Value: $24.91

Target Price: $31.10

Target Year 1 Return: 19.06%

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CENTER FOR GLOBAL FINANCIAL STUDIES

Micron Technology, Inc. (MU)

NEUTRAL

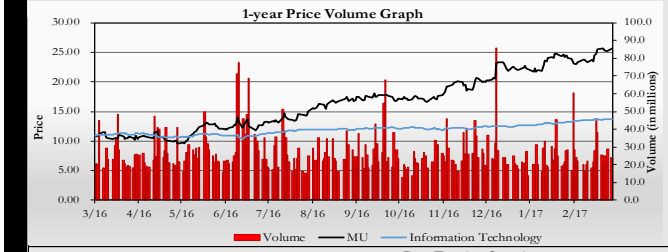
Analysis by Michael Capozzi

3/16/2017

Current Price:	$26.12	Intrinsic Value	$24.91
Divident Yield:	0.0%	Target Price	$31.10

Target 1 year Return: 19.06%

Probability of Price Increase: 100%



Description

Micron Technology, Inc. provides semiconductor systems worldwide.

General Information

Sector	Information Technology
Industry	Semiconductors and Semiconductor Equipment
Last Guidance	November 3, 2015
Next earnings date	March 23, 2017
Estimated Country Risk Premium	9.52%
Effective Tax rate	22%
Effective Operating Tax rate	19%

Market Data

Market Capitalization	$28,796.14
Daily volume (mil)	29.71
Shares outstanding (mil)	1102.46
Diluted shares outstanding (mil)	1037.25
% shares held by institutions	74%
% shares held by investments Managers	68%
% shares held by hedge funds	7%
% shares held by insiders	0.39%
Short interest	4.16%
Days to cover short interest	1.78
52 week high	$26.15
52-week low	$9.35
Levered Beta	1.97
Volatility	42.99%

Past Earning Surprises

Quarter ending	Revenue	EBITDA
12/3/2015	-5.42%	-14.21%
3/3/2016	-6.20%	-0.90%
6/2/2016	-7.41%	-13.38%
9/1/2016	-2.96%	-25.68%
12/1/2016	-0.48%	-17.10%
Mean	-4.49%	-14.25%
Standard error	1.2%	4.0%

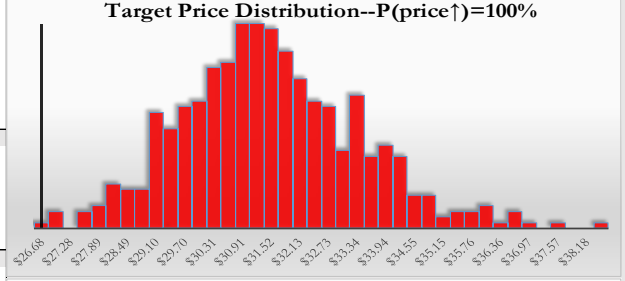
Peers

Texas Instruments Incorporated
Advanced Micro Devices, Inc.
NVIDIA Corporation
Intel Corporation
Broadcom Limited
Microchip Technology Incorporated
QUALCOMM Incorporated
Cypress Semiconductor Corporation

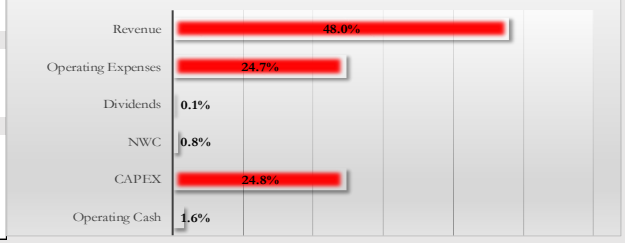
Management	Position	Total compensations growth	Total return to shareholders
Durcan, D.	Chief Executive Officer and	4.64% per annum over 6y	4.51% per annum over 6y
Maddock, Ernest	Chief Financial Officer and	19.96% per annum over 2y	5.54% per annum over 2y
Thorsen, Steven	Vice President of Worldwide	-8.41% per annum over 3y	-18.89% per annum over 3y
Shirley, Brian	Vice President of Memory Tec	7.39% per annum over 6y	4.51% per annum over 6y
DeBoer, Scott	Vice President of Technology	-1.71% per annum over 2y	5.54% per annum over 2y
Schultz, Trevor	Chief Information Officer an	N/M	N/M

Profitability	MU (LTM)	MU (5 years historical average)	Industry (LTM)
ROIC	6.3%	10.28%	12.80%
NOPAT Margin	12%	12.63%	21.3%
Revenue/Invested Capital	0.54	0.81	0.60
ROE	7.2%	13.47%	14.08%
Adjusted net margin	9%	10.59%	19.9%
Revenue/Adjusted Book Value	0.82	1.27	0.71
Invested Funds	**MU (LTM)**	**MU (5 years historical average)**	**Industry (LTM)**
Total Cash/Total Capital	14.8%	17.5%	39%
Estimated Operating Cash/Total Capital	11.8%	13.6%	N/A
Non-cash working Capital/Total Capital	3.4%	8.9%	8%
Invested Capital/Total Capital	93.0%	89.5%	55%
Capital Structure	**MU (LTM)**	**MU (5 years historical average)**	**Industry (LTM)**
Total Debt/Common Equity (LTM)	0.52	0.42	0.13
Cost of Existing Debt	5.61%	6.28%	3.32%
Estimated Cost of new Borrowing	3.59%	4.00%	3.32%
CGFS Risk Rating	BB	B	B
Unlevered Beta (LTM)	1.35	1.30	1.22
WACC	15.96%	15.04%	15.24%

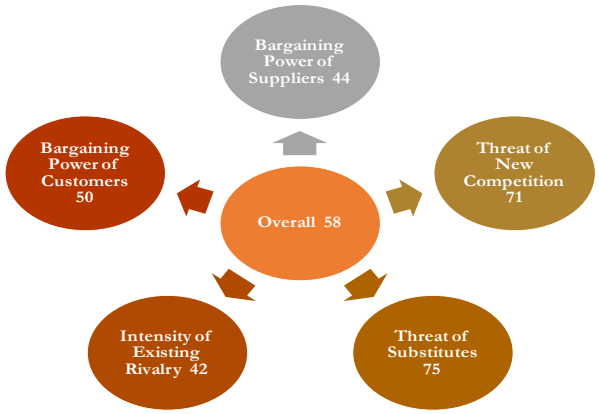
Target Price Distribution--P(price↑)=100%



Sensitivity Attribution Analysis



Porter's 5 forces (scores are out of 100)



Valuation

Period	Revenue growth	NOPAT margin	ROIC/WACC
Base Year	-13.0%	11.7%	0.40
12/1/2017	24.1%	26.9%	1.04
12/1/2018	2.0%	36.0%	2.02
12/1/2019	2.2%	33.7%	1.77
12/1/2020	2.5%	31.6%	1.59
12/1/2021	2.7%	29.5%	1.43
12/1/2022	2.9%	27.9%	1.33
12/1/2023	3.2%	26.3%	1.24
12/1/2024	3.4%	24.9%	1.16
12/1/2025	3.6%	23.5%	1.10
12/1/2026	3.8%	22.2%	1.04
Continuing Period	4.1%	20.9%	0.98

Period	Invested Capital	Net Claims	Price per share
Base Year	$12,121.44	$8,859.14	$23.26
12/1/2017	$14,282.54	-$4,750.23	$29.78
12/1/2018	$17,388.17	-$10,131.02	$34.98
12/1/2019	$18,796.45	-$15,289.30	$39.93
12/1/2020	$23,995.36	-$20,128.28	$44.65
12/1/2021	$26,151.32	-$24,663.64	$49.14
12/1/2022	$18,375.24	-$29,001.44	$53.53
12/1/2023	$20,139.67	-$33,108.95	$57.82
12/1/2024	$21,641.32	-$37,005.95	$62.05
12/1/2025	$22,997.32	-$40,740.38	$66.31
12/1/2026	$24,200.94	-$44,311.30	$70.63
Continuing Period			

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BJORKLUND FUND

March 17, 2017

NASDAQ- Tech Data Corporation

Analyst: Joseph Nastasi

Sector: Information Technology
Industry: Electronic Equipment, Instruments and Components

Company Description:

Tech Data Corporation is one of the world's largest wholesale distributors of technology products. It provides thousands of different items to more than 105,000 resellers in 100-plus countries. Its diverse range of products includes computer components, networking equipment, peripherals, systems, and software. Tech Data helps companies like Apple, Cisco, Microsoft, and hundreds of others, bring their products to market. Tech Data was incorporated in 1974.

BUY

Current Price:	$94.81
Target Price:	$122.17
Market Cap:	3.60B
Volume:	404,587
S&P Debt Rating:	BBB-
Ke:	13.0%
ROE:	9.30%
Net Income Margin:	1.01
Total Asset Turnover:	3.70
Equity Multiplier	3.66
Cash/ Total Assets:	8.4%

Catalysts:

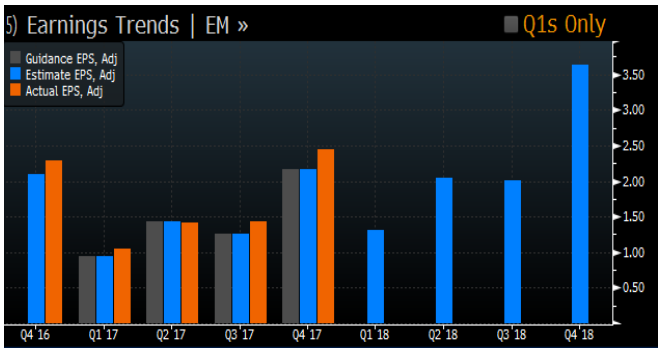
- **Short Term(within the year):** Q1 2017 Earnings
- **Mid Term(1-2 years):** Synergies obtained from implementing the acquisition of Avnet's Technology Solutions Business into operations
- **Long Term (3+):** Pivoting to distributing 3rd Platform Technologies like cloud services, information security, and data analytics

Thesis:

Tech Data Corporation is the largest and most efficiently run distributor in the information technology industry. Tech Data had a solid 4th quarter earnings performance by drastically decreasing its cash conversion cycle to 15 days and generating $657 million in operating cash flow for the fiscal year. The acquisition of Avnet's Technology Solutions Business will provide Tech Data with increased capabilities and expanded reach across technologies and geographies, especially in Asia-Pacific. Tech Data is able to pivot in a disruptive technology industry from unsuccessful to successful products. The acquisition also gives Tech Data an advantage into third platform products compared to its competitors. Tech Data has low profitability margins compared to its competitors. Tech Data is underpriced right now and has strong fundamentals for its stock price to continue increasing

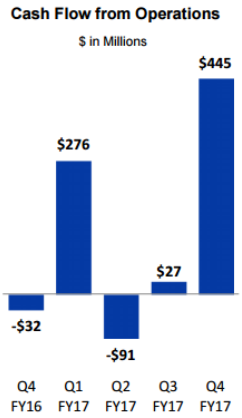
4th Quarter Earnings Performance:

Tech Data reported strong 4th Quarter earnings with CFO Chuck Dannewitz stating, "Despite a muted demand environment, disruptive technologies, and various external factors. In fiscal 2017, Tech Data was able to deliver double-digit growth in non-GAAP earnings per share, generate excellent operating cash flow, and earn an industry-leading return on invested capital."



Cash Conversion Cycle

	Q4 FY16	Q1 FY17	Q2 FY17	Q3 FY17	Q4 FY17
Days of Sales Outstanding	37	39	39	40	37
Days of Supply	27	34	32	33	27
Days of Purchases Outstanding	(44)	(51)	(49)	(51)	(49)
Cash Conversion Cycle	**20**	**22**	**22**	**22**	**15**



Net sales were reported at $7.4 billion declining 1% from the previous year, but increasing 14% from the previous quarter. The decline from the previous year is due to currency exchange impacts, especially a decline of 16% in the British pound to the U.S. dollar average exchange rate from the year-ago quarter. Gross profit was reported at $371 million and gross margin was reported at 5%. Gross profit increased by 4.6% from the previous year and gross margin increased by 5.5% from the previous year. Operating income was reported at $122.1 million for the quarter with a margin of 1.64%. This is a 4.5% increase from the previous year and a 5% increase in operating margin. The most impressive results were the cash conversion cycle and cash flow from operations. Tech Data's cash conversion cycle was reported at 15 days for the quarter. This is a decrease of 7 days compared to Q3 and 5 days from the prior year quarter. The cash conversion cycle is crucial for a distribution company leading to the huge jump in operating cash flow to $445 million. This brings year-to-date operating cash flow to $657 million. This amount of cash flow is important regarding Tech Data's acquisition of Avnet's Technology Solutions Business. After the 4Q earnings report on March 8th, the stock slid down 5% from 93.8 to 89.1 due to the lack of guidance for the next quarter and fiscal year. This lack of guidance was due to only closing the acquisition of Avnet's Technology Solutions Business last week. Guidance will resume when Q1 earnings are reported. On March 9th the stock rallied to 94.8 following the

analyst at Needham & Company (who follows Tech Data) upgrading the stock to a buy stating how the company has impressive execution and the lack of guidance is not a concern.

Industry Outlook:

Investors see Tech Data Corporation as a proxy of the Technology Industry. This is due to that Tech Data represents all fractions of the industry with its vendor partners of Apple, HP, Cisco, IBM, Intel, Microsoft, Xerox, Dell, and hundreds of others. Tech Data's growth is very dependent on the demand for its vendor partner's products. Tech Data is able to be competitive as a distributor in this challenging industry due to its breadth of products offered and the ability to pivot from products not performing well to hot product segments. This allows Tech Data to be able to meet the constantly changing demand of technology consumers. The Wholesale Distribution Industry is characterized by intense competition based on factors such as product availability, credit terms, price, speed of delivery, effectiveness of information system, quality and depth of product lines, and ability to tailor solutions to customers' needs. Tech Data's main competitors in America are Ingram Micro Inc, Synnex Corp, Arrow Electronics, and Avnet. While European competitors are more fragmented. Competition is also from venders who enter or expand into the logistics and e-commerce supply chain services market. Venders will continue to rely on distributors, like Tech Data, due to its capabilities to manage multiple products, provide access to fragmented markets, and deliver products in a cost-efficient and efficient matter due to its economies of scale and global reach.

Business Model:

Tech Data has the slogan, "From the Data Center to the Living Room." The mix of products distributed provides am end-to-end portfolio of IT solutions. Tech Data distributes products like servers, networking, and servers (Data Center) to products like TVs, tablets, mobile phones (Living Room). The breakdown of their product segments as a % of net sales is shown below along with the numerous products they offer.

	Products	FY17 *(% of total net sales)*
Broadline	Notebooks, Tablets, Desktops, Printers & Supplies Components	47%
Data Center	Industry Standard Servers, Proprietary Servers, Networking, Storage	21%
Software	Virtualization, Cloud, Security, Desktop Applications, Operating Systems, Utilities Software	17%
Mobility	Mobile Phones, Accessories	11%
Consumer Electronics	TVs, Digital Displays, Consumer A/V Devices Network-Attached Consumer Devices	3%
Services		Less than 1%

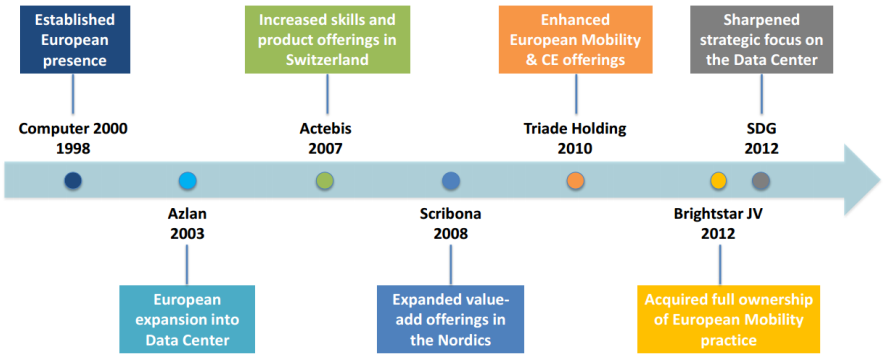
Net sales were about $12 billion for broadline, $6 billion for data center, $5 billion for software, $3billion for mobility, and $1 billion for consumer electronics. Tech Data is very adaptive to disruptive change in the technology industry. For example, in 2006 broadline was 70% of total net sales, while now it is 47% of net sales. Tech Data's mix of products always them to pivot from unsuccessful products to successful products that are the new trend.

The 2016 net sales by geography are 60% Europe and 40% Americas. Tech Data Corporation distributes and markets hundreds of thousands of products from more than 1,200 of the world's leading technology companies. These products are usually purchased directly from vendors with no contract restriction from selling similar products from competitors. This allows Tech Data to have the flexibility to terminate or continue to sell one product line in favor of another. Apple represents 24% and HP Inc. represents 12% of net sales. This is due to Apple and HP products are in high demand, so Tech Data pivots to these products. Also, Tech Data is the world's leading company distributing the Microsoft Surface Tech Data distributes and markets its vendor's products to an active reseller base of approximately 105,000 value-added resellers

(VARs), direct marketers, retailers and corporate resellers. Tech Data is the largest wholesaler of technology products due to it being the industry leader in finding the most efficient and least expensive routes to market for its vendor partners. This is done by having 22 logistics centers where each day, tens of millions of technology products are received from venders, picked and packaged and shipped to customers. The strategy of Tech data is to continuously remix their product portfolios towards higher growth and higher return segments. This is best shown with their focus on Third Platform Technologies (discussed in section labeled Third Platform Technologies).

Acquisitions:

Tech Data has numerous strategic key acquisitions that have been key to their increased capabilities and global reach. These acquisitions are shown below:



Tech Data recently completed acquisition of the Technology Solutions Business from Avnet on February 27th, 2017. The agreement is a stock and cash transaction valued at approximately $2.6 billion. Avnet will receive $2.4 billion in cash and 2.785 million shares of Tech Data common stock, valued at approximately $200 million. Before the acquisition, Tech Data and Avnet's Technology Solutions Business competed on 20,000 clients. The acquisition allows Tech Data to better balance its geographic business between North America and Europe. Also, expand reach into the Asia-Pacific due to the Technology Solutions Business presence there. Tech Data is expected to generate 3% of its net sales in Asia Pacific compared to having no presence there now. Tech Data's datacenter will expand with greater storage and servers capabilities. Establish vendor relationships from Avnet with companies like Oracle and Amazon Web Services along with 40 other top IT venders. This will add to Tech Data's already 400 vender relationships. Estimated $100 million in cost savings within the first two years. This savings comes from the combination of duplicated activities and functions. Tech Data's new projected revenue mix and pro-forma revenue from the acquisition is shown below.

Most importantly, this acquisition will allow Tech Data to be better positioned to facilitate the move to the cloud, Internet of Things (IoT), and other 3rd Platform and innovation accelerator technologies. CEO Bob Dutkowsky stated about the acquisition, "Tech Data will be even better positioned to capture opportunities in next-generation technologies, deliver differentiated value to our customers and vendor partners, and generate strong returns for our shareholders."

Ownership/Management:

54) Ownership Type	03/12/17	Curr	Change
41) Investment Advisor	86.14	86.20	+0.06
42) Hedge Fund Manager	6.60	6.58	-0.02
43) Individual	2.02	1.99	-0.03
44) Pension Fund	1.49	1.49	0.00
45) Sovereign Wealth Fund	1.22	1.21	-0.01
46) Insurance Company	1.09	1.09	0.00
47) Bank	0.80	0.80	0.00
48) Brokerage	0.20	0.19	-0.01
49) Government	0.18	0.18	0.00

The ownership type graph is shown to the left. Investment advisors hold a majority of the ownership type with 86.2% of the shares outstanding. Second are hedge fund managers with holdings of 6.58%. Third are individuals with holdings of 1.99%. There has not been much change in the ownership type.

The short interest for Tech Data and its competitors are shown in the graph below.

Name (BICS Best Fit)	Short Interest (M shrs)	SI 1 Mo Change	SI (% of avg. daily vol.)	SI (% of float)	SI % Change	Last Px (USD)	30 Day Avg Volume
Median	1.73M	118.75k	3.92	2.53	-0.99	85.17	489.37k
100) TECH DATA CORP	1.46M	-97.17k	8.36	3.92	-2.38	94.99	268.55k
101) AVNET INC	3.58M	1.18M	3.18	2.80	10.04	46.05	1.07M
102) ARROW ELECTRONICS INC	1.99M	135.01k	3.50	2.26	-5.55	75.35	710.19k
103) SYNNEX CORP	593.10k	102.49k	4.35	2.02	0.40	119.90	140.82k

The amount of short interest is much higher for Tech Data (3.92%) compared to its competitors of Avnet, Arrow Electronics, and Synnex Corp. However, Tech Data has had a 2.38% decrease in short interest. This high amount of short interest compared to its competitors means that these shorts will have to cover and will bring the stock price up. The decreasing amount of short interest is showing this trend. The Chief Executive Officer of Tech Data is Robert Dutkowsky. He was appointed Chief Executive Officer in October 2006. Dutkowsky's career began with IBM where, during his 20-year tenure, he served in several senior management positions. The Executive Vice President and Chief Financial Officer is Charles Dannewitz. He joined the company in February 1995 as Vice President of Taxes. He assumed responsibility for worldwide treasury operations in July 2003. Dannewitz was appointed CFO in June 2015. The following compensation of senior management is shown below.

Name	Title Sort by Rank	FY 2013 (USD)	FY 2014 (USD)	FY 2015 (USD)	FY 2016 (USD)
Dutkowsky, Robert M.	Chief Executive Officer and Executive Director	1,821,718	1,743,484	2,778,359	3,413,430
Cano, Néstor (Prior)	Former President of Europe	1,273,591	1,180,984	2,345,090	2,214,105
Howells, Jeffery P. (Prior)	Former Chief Financial Officer and Executive Vice President	1,174,490	1,163,314	1,680,012	1,502,584
Dannewitz, Charles V.	Chief Financial Officer and Executive Vice President	-	-	-	1,062,561
Tonnison, John A.	Chief Information Officer and Executive Vice President of Cloud Computing	590,198	585,586	806,734	1,031,601
Quaglia, Joseph H.	President of the Americas	-	-	843,923	873,139
Raymund, Stephen A.	Chairman	350,132	354,922	350,867	358,202

Robert Dutkowsky total compensation increased from about $2.8M to $3.4M from FY 2015 to FY 2016. This is about a 42% increase. Tech Data Corporation's stock price has increased by about 40% from FY 2015 to FY 2016. This makes the compensation increase for the CEO reasonable.

Capital Allocation Comparison:

Tech Data had very little debt compared to its competitors, but increased recently due to the acquisition of the Technology Solutions Business from Avnet. Due to the acquisition, Tech Data added a combination of $1

billion of new term loans, upsized their revolving credit facility by $500 million, and issued $1 billion of public bonds. Tech Data's total debt, capitalization, cost of debt, WACC, and ROC/WACC are shown below.

Capitalization (Debt/Equity)	History	LFY
TECD	0.17	0.45
Competitors	0.46	0.38

Kd	History	LFY
TECD	7.0%	4.3%
Competitors	5.7%	4.6%

WACC	History	LFY
TECD	13.5%	11.5%
Competitors	12.4%	11.2%

ROC /WACC	History	LFY
TECD	0.59	0.79
Competitors	0.86	0.96

In Millions of USD	FY 2014	FY 2015	FY 2016	FY 2017	Current/LTM
12 Months Ending	01/31/2014	01/31/2015	01/31/2016	01/31/2017	01/31/2017
Market Capitalization	2,052.3	2,134.4	2,189.1	3,014.0	3,610.2
- Cash & Equivalents	570.1	543.0	531.2	2,125.6	2,125.6
+ Preferred & Other	0.0	0.0	0.0	0.0	0.0
+ Total Debt	397.6	364.9	366.7	1,363.0	1,363.0
Enterprise Value	1,879.8	1,956.3	2,024.6	2,251.4	2,847.7

Tech Data has a history of debt to equity of 0.17, but for its last fiscal year it was 0.45. This was above its competitors. Tech Data's cost of debt decreased from 7% to 4.3% this is due to receiving better debt terms for its most recent new loans. Considering the lower cost of debt, Tech Data's WACC also decreased to being very close to its competitors. Its return on capital to WACC is at 0.79, which is lower than its competitors at 0.96. With this new acquisition, Tech Data will be more efficient in its cost and operations, which will lead to ROC/WACC trending closer to its competitors. Total debt increased from $366.7 million in FY 2016 to $1,363 million in FY 2017. CEO Bob Dutkowsky stated, "In terms of capital allocation, our first priority is debt reduction. Our principal focus for the next 18 to 24 months will be to deleverage our balance sheet in order to retain our investment-grade ratings. Tech Data had year to date operating cash flow of $657 million. Operating cash flow will be used to pay off the debt with no new equity offerings. Tech Data was financially well positioned to take on debt for its acquisition.

Profitability Comparison:

Tech Data's revenue, gross profit, EBITDA, and EPS are shown below.

In Millions of USD	FY 2014	FY 2015	FY 2016	FY 2017
12 Months Ending	01/31/2014	01/31/2015	01/31/2016	01/31/2017
Revenue, Adj	26,821.9	27,670.6	26,379.8	26,234.9
Growth %, YoY	5.8	3.2	-4.7	-0.5
Gross Profit, Adj	1,362.3	1,394.0	1,286.7	1,301.9
Margin %	5.1	5.0	4.9	5.0
EBITDA, Adj	320.1	326.4	353.0	–
Margin %	1.2	1.2	1.3	–
Net Income, Adj	197.8	153.5	191.0	213.7
Margin %	0.7	0.6	0.7	0.8
EPS, Adj	5.18	4.01	5.29	6.04
Growth %, YoY	-3.6	-22.6	32.1	14.1

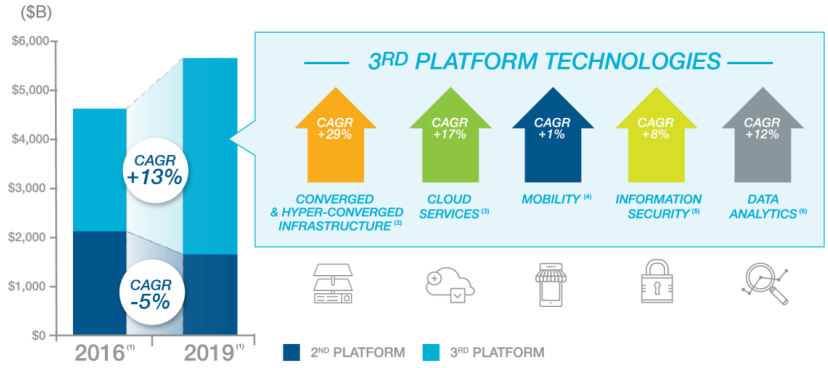
Revenue remained flat decreasing by 0.5% from FY 2016 to FY2017. This was due to currency exchange impacts, specifically a decline of 16% in the British pound to the U.S. dollar average exchange rate from the year-ago quarter. Gross profit increased by 5%, net income increased by 0.8%, and EPS increased by 14.1%. The chart also shows how gross profit margin increased from 4.9% to 5% from FY 2016 to FY2017. Also, net income margin increased from 0.7% to 0.8%. Tech Data's financial was better despite the tough environment, explained by the CFO Chuck Dannewitz, in the technology sector. Below shows numerous profitability ratios along with activity ratios for Tech Data and its competitors (Arrow Electronics, Synnex Corp, and Avnet).

Name (BICS Best Fit)	ROE	ROA:Y	GM:Y	PM:Y	OPM:Y	Ast TO:Y	Inv Turnover:Y
Median	11.53%	4.56%	10.35%	1.90%	3.06%	2.64	8.50
100) TECH DATA CORP	10.22%	2.99%	4.96%	0.81%	1.21%	3.67	11.77
101) ARROW ELECTRONICS INC	13.41%	4.21%	13.20%	2.41%	3.91%	1.75	7.77
102) SYNNEX CORP	12.84%	5.06%	9.12%	1.74%	2.80%	2.91	8.32
103) AVNET INC	9.05%	4.91%	11.59%	2.07%	3.31%	2.38	8.68

Tech Data has lower profitability ratios compared to its competitors. Its return on assets, gross margin, profit margin, and operating margin are much lower than its competition. Management has been generating less profits out of every dollar of revenue. This is due to the lower price Tech Data offers compared to its competitors. This is part of Tech Data's strategy to let smaller vendor partners, not just the large vendor partners, benefit from the distribution service. This is a value opportunity for Tech Data to increase its margins to a range closer to its competitors. However, Tech Data has greater activity ratios compared to its competitors. With its asset turnover and inventory turnover being much greater. This shows the efficiency of Tech Data's operations and how they are able to charge lower prices compared to its competitors.

Third Platform Technologies:

Tech Data sees third platform technologies as the next disruptive change in the technology industry. This includes products like cloud, big data and analytics, social, innovation technologies including the Internet of Things (IoT), cognitive computing, virtual reality, and next generation security. Tech Data projects the constant annual growth rate for these third platform technologies below.



Third platform technologies are growing at 13% compared to second platform products growing at negative 5%. Second platform products are client and server systems like tablets, desktops, printers, etc. Some specific third platform products include cloud services growing at 17%, information security growing at 8%, and data analytics growing at 12%. Tech Data's competitive advantage comes from taking advantage of disruptive technological changes pivoting, for example, from second platform technologies to third platform technologies. The acquisition of the Technology Solutions Business from Avnet gives Tech Data the capabilities to pivot to third platform technologies with the pooling of both company's resources. Tech Data being able to capture the huge expected returns of third platform technologies is a catalyst to make the company more profitable for its shareholders.

Summary:

In conclusion, Tech Data Corporation is a buy at its current price due to its upward growth potential. Tech Data is vendor partners with the largest companies in the technology industry including Apple, HP, Cisco, IBM, Microsoft, Xerox, and Dell. Tech Data represents all fractions of the technology industry. Tech Data has an competitive advantage due to its distribution centers that provide the least expensive routes to market for its vendors' products. The acqusition of Avnet's Technology Solutions Business allows Tech Data to have access in Asia-Pacific, add new vendor relationships, and increase the capabilities of the operations to be prepared for the disruptive change to third platform technologies. Tech Data Corporation's one-year target price of $122.17 is reasonable due to their upward growth potential

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Tech Data Corporation (TECD)

CENTER FOR GLOBAL FINANCIAL STUDIES

BULLISH

Analysis by Joseph Nastasi
3/17/2017

Current Price:	$94.99	Intrinsic Value	$90.97
Divident Yield:	0.0%	Target Price	$116.81

Target 1 year Return: 22.97%
Probability of Price Increase: 66.6%

Description

Tech Data Corporation engages in the wholesale distribution of technology products.

General Information

Sector	Information Technology
Industry	Electronic Equipment, Instruments and Comp
Last Guidance	November 3, 2015
Next earnings date	NM
Estimated Country Risk Premium	8.72%
Effective Tax rate	31%
Effective Operating Tax rate	31%

Market Data

Market Capitalization	$3,610.24
Daily volume (mil)	0.33
Shares outstanding (mil)	38.01
Diluted shares outstanding (mil)	35.43
% shares held by institutions	93%
% shares held by investments Managers	86%
% shares held by hedge funds	8%
% shares held by insiders	1.45%
Short interest	3.84%
Days to cover short interest	5.77
52 week high	$96.14
52-week low	$61.93
Levered Beta	0.89
Volatility	26.98%

Past Earning Surprises

Quarter ending	Revenue	EBITDA
1/31/2016	4.50%	1.74%
4/30/2016	-1.24%	-7.40%
7/31/2016	-4.61%	-9.66%
10/31/2016	1.40%	1.74%
1/31/2017	-1.56%	-2.80%
Mean	-0.30%	-3.27%
Standard error	1.5%	2.3%

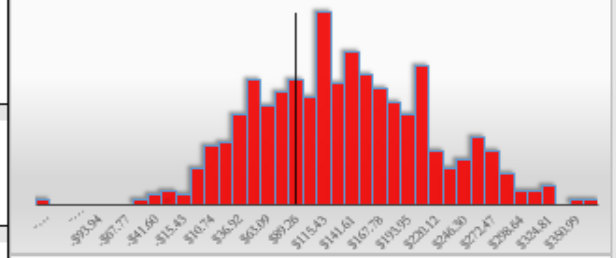
Peers

Avnet, Inc.
Arrow Electronics, Inc.
SYNNEX Corporation
CDW Corporation
Anixter International Inc.
ScanSource, Inc.
Insight Enterprises, Inc.

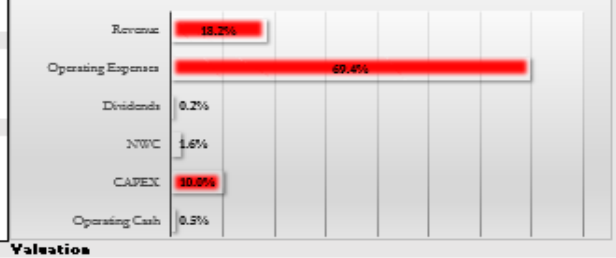
Management	Position	Total compensations gro	Total return to shareholders
Dutkowsky, Robert	Chief Executive Officer and	3.53% per annum over 5y	2.17% per annum over 5y
Dannewitz, Charles	Chief Financial Officer and	N/M	0% per annum over 0y
Tonnison, John	Chief Information Officer an	10.94% per annum over 3y	4.45% per annum over 3y
Guaglia, Joseph	President of the Americas	-6.53% per annum over 1y	9.28% per annum over 1y
Dow, Andy	Member of Executive Board	N/M	N/M
Hume, Richard	Chief Operating Officer and	N/M	N/M

Profitability	TECD (LTM)	TECD (5 years historical a	Industry (LTM)
ROIC	8.7%	8.56%	9.42%
NOPAT Margin	1%	1.17%	12.4%
Revenue/Invested Capital	9.04	7.32	0.76
ROE	9.0%	9.31%	10.39%
Adjusted net margin	1%	1.06%	11.4%
Revenue/Adjusted Book Value	11.96	8.80	0.91
Invested Funds	**TECD (LTM)**	**TECD (5 years historical a**	**Industry (LTM)**
Total Cash/Total Capital	49.3%	23.5%	16%
Estimated Operating Cash/Total Capital	11.4%	13.4%	N/A
Non-cash working Capital/Total Capital	22.0%	37.1%	14%
Invested Capital/Total Capital	54.5%	78.3%	84%
Capital Structure	**TECD (LTM)**	**TECD (5 years historical a**	**Industry (LTM)**
Total Debt/Common Equity (LTM)	0.52	0.35	0.14
Cost of Existing Debt	8.79%	8.42%	3.36%
Estimated Cost of new Borrowing	11.94%	11.94%	3.36%
CGFS Risk Rating	F	F	B
Unlevered Beta (LTM)	0.72	0.99	0.89
WACC	10.30%	12.89%	11.24%

Target Price Distribution--P(price↑)=66.6%



Sensitivity Attribution Analysis



Porter's 5 forces (scores are out of 100)

Valuation

Period	Revenue growth	NOPAT margin	ROIC/WACC
Base Year	-0.5%	1.0%	0.85
1/31/2018	27.1%	1.6%	2.12
1/31/2019	0.7%	0.8%	0.55
1/31/2020	1.0%	1.5%	0.77
1/31/2021	1.4%	2.2%	0.85
1/31/2022	1.8%	3.0%	0.92
1/31/2023	2.1%	3.8%	0.96
1/31/2024	2.5%	4.6%	1.00
1/31/2025	2.9%	5.4%	1.04
1/31/2026	3.2%	6.3%	1.07
1/31/2027	3.6%	7.2%	1.10
Continuing Period	4.0%	8.1%	1.12

Period	Invested Capital	Net Claims	Price per share
Base Year	$2,595.97	-$62.36	$115.48
1/31/2018	$2,734.81	$1,583.78	$129.95
1/31/2019	$2,843.78	$3,037.56	$145.16
1/31/2020	$2,858.23	$4,823.38	$164.94
1/31/2021	$2,902.07	$6,400.83	$190.62
1/31/2022	$2,350.30	$7,866.77	$222.95
1/31/2023	$4,608.97	$9,184.24	$262.51
1/31/2024	$6,214.64	$10,365.44	$309.94
1/31/2025	$8,338.52	$11,408.38	$366.14
1/31/2026	$10,436.66	$12,282.21	$431.93
1/31/2027	$12,654.12	$12,984.41	$508.22
Continuing Period			

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March 2017

Cirrus Logic, INC: CRUS (Long)

John Garrity

Sector: Information Technology
Industry: Semiconductors and Semiconductor Equipment
Current Price: $58.05
Target Price: $65.00

Company Description:

Cirrus Logic, Inc. is a leader in high performance, low-power integrated circuits for audio and voice signal processing applications for mobile applications including smartphones, wearables, tablets, digital headsets, as well as other segments such as smart home, consumer, automotive, energy, and industrial markets. Cirrus Logic's products span the entire audio signal chain, from capture to playback, backed by more than 2,450 pending and issued patents worldwide. With a robust portfolio of low power products including smart codecs, digital signal processors, boosted amplifiers, and microelectromechanical microphones (MEMS) that are coupled with the essential tools, software, and associated algorithms, Cirrus Logic is well positioned to drive innovation and growth in the expanding market for voice and audio technology.

Key Statistics:

Market Price:	$58.05	ROE:	23.42%
Market Cap:	$3.75B	Net Income	
WACC:	9.86%	Margin:	10.57%
ROIC:	20.85%	P/E:	18.05 x
EBITDA Margin:	20.41%	Div. Yield:	3.42%
Ke:	10.05%	Volume:	1,524,761

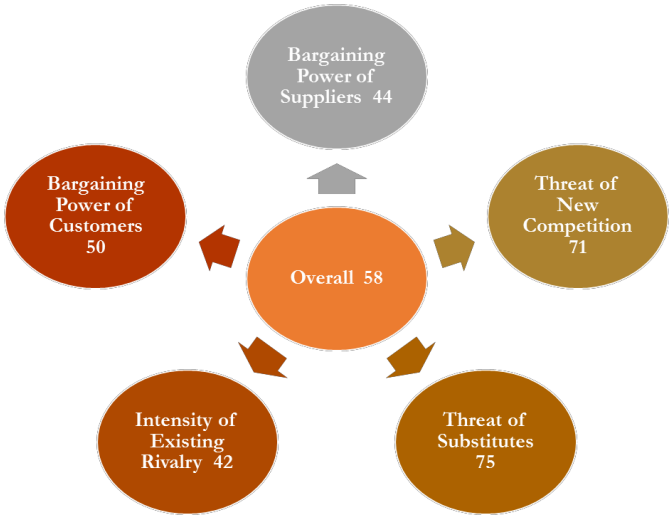
Catalysts:

> Apple's iPhone performance
> New Products
> Voice Biometrics
> Active Noise Control
> Third-party manufacturing
> Earnings Report on April 19th

Thesis:

Cirrus Logic, Inc. was incorporated in California in 1994, and became a public company in 1989. They were reincorporated in 1999 for the State of Delaware. Their primary engineering, sales and marketing, and administrative functions are located in Austin, Texas. Cirrus also has locations in the United States, U.K., Sweden, Spain, Australia, and the People's Republic of China, Hong Kong, South Korea, Japan, Singapore, and Taiwan. Cirrus targets growing markets where they can leverage expertise and digital signal processing to solve complex problems. Cirrus focuses on building strong relationships with their customers to develop highly differentiated components. Often, Cirrus develops a design that can be expanded into additional products. This strategy gives Cirrus the opportunity to increase content over time with customers with new features, integration of other system components, and new components. There are many factors that would lead to substantial growth. As of the third quarter, Apple represented 66% of Cirrus' revenue, which pushed past a billion dollars for the first time for the year 2016. Although Apple is a reliable customer, more diversification is needed. In addition, new products and new technologies could spur growth in the semiconductor industry. Voice biometrics is a growing market for many different sectors, and it allows people to interact with their devices via voice commands. Biometrics is certainly a growing market, but active noise cancellation (ANC) in headphones will be a more immediate catalyst. Samsung, a customer of Cirrus, anticipates this technology will cut out ambient noise by 20 decibels, which provides a competitive edge.
These factors, including the earnings report expected to come out at the end of April, will significantly influence the value of Cirrus Logic, Inc.

Industry Outlook:



Markets for Cirrus products are highly competitive and according to the company, competition will only increase. No single company competes with Cirrus in all of their product lines, but competition in all markets is significant. Within portable audio, Cirrus is the leading integrated circuit (IC) supplier, with "end-to- end" solutions from capture to playback of audio; which include amplifiers, codecs, digital signal processors (DSPs), and MEMS. However, Cirrus expects additional completion in the domestic and international markets from both large and small IC manufacturers. The main factors of competition for Cirrus are the time to market, quality of hardware and software, end-market systems expertise, price, product performance, quality and compatibility with standards. Life cycles for products in this industry vary greatly by product. Portable audio devices have shorter design cycles, so a competitor could take advantage of these short times and achieve "design wins" in the upcoming systems. At the same time, Cirrus is able to take advantage of the frequent opportunities to displace competitors.

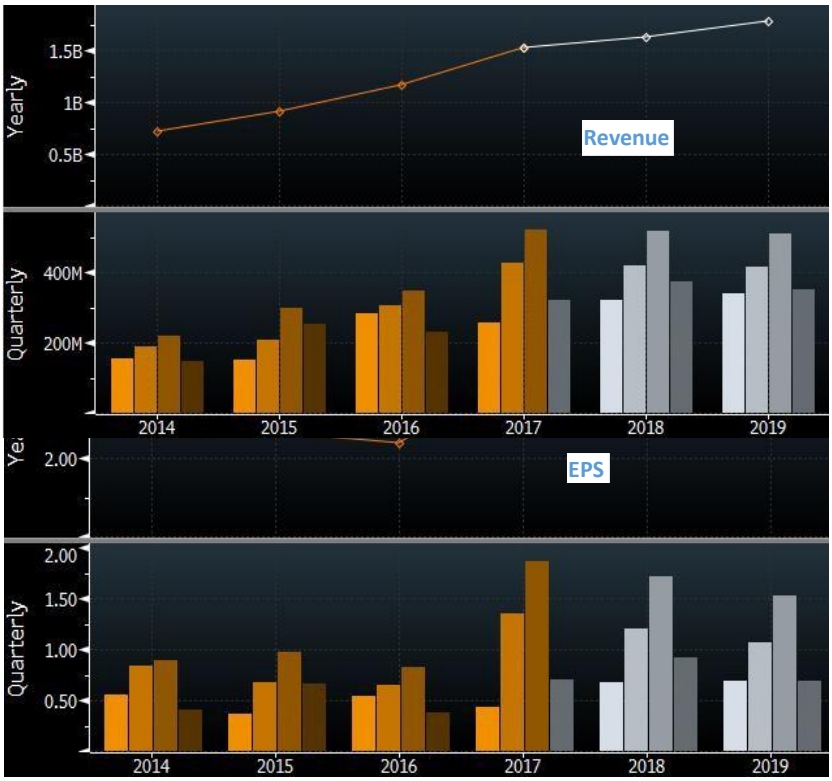
Products:

Cirrus currently outsources its manufacturing functions around the world who then make, package and test the products. Cirrus breaks down their products into two main categories; portable audio products and non- portable audio & other products. Portable audio products include analog audio converters, mixed-signal audio converters, and digital signal processing products. These products are used in many of today's mobile applications including smartphones, tablets, portable media players, wearables, and smart accessories like digital headsets and headphones. Included in these products are codecs, smart codecs, DSP's, and SoundClear® technology. Codecs are chips that combine analog-to-digital converters (ADC's) and digital-to-analog converters (DAC's) into a single IC. ADC's converts analog (real world signals like voice, audio, and video) into a digital signal which allows an electronic playback. DAC's perform the reverse function. Codecs allow for easy compression of video and audio files without losing any quality or information. Smart codecs are codecs that compress the important parts of a video or audio file and the irrelevant parts at different rates. This allows the user to compress less on certain parts of the file and compress more on the parts that do not require high quality. Ultimately, smart codecs allow the size of the file to be greatly reduced while maintaining quality. DSP's process digital signals in real time and improve the sound, images, in a fast time and transmit the signal for which the data can be displayed or transmitted to another type of signal. SoundClear® technology is a patented audio software that improves voice quality and speech recognition performance by eliminating noise and echo cancelation in mobile devices. SoundClear® also improves consumer audio applications and are pioneering the advancement of consumer devices where "simultaneous voice command and control are featured". Non-portable audio products provided by Cirrus are IC's that are utilized by applications in home theatre systems, computers, docking stations, game consoles, automotive entertainment systems, and TV's.

Digital Signal Processor made by Cirrus Logic, Inc.

Revenue:

Cirrus Logic generated over 1.2 billion dollars in sales over the 2016 fiscal year, and anticipates 1.5 billion in sales for 2017. In 2016, the Asian/Pacific geographic segment made up 1.1 billion of the 1.2 billion in sales, with North America being their second largest geographic segment with 73.9 million and Europe generated 18.4 million. China provides Cirrus with 70 percent of their revenue and only 6 percent in the United States. Eighty-five percent of the company's revenue came from portable audio products in 2016 with an increase of sales of 34 percent. Net income has been favorable in the recent years thanks to soaring revenues. In the calendar year 2015, Cirrus experienced a 182 percent



increase and 76 percent in 2016 in net income. This can attributed to larger-than-expected demand for certain portable audio products. While sales increased 34 percent, operating expenses grew at only 8 percent. Even with the growth experienced over the past year, the company is expected to broaden the addressable market and drive future growth opportunities. CEO John Rhode said that many of their potential growth vectors, including digital headsets and mid-tier smartphones, are still in the early stages of development. With a complete audio signal chain, Cirrus believes that they are well-positioned to continue to be a leading provider of audio and voice technology. Cirrus beat earnings projections for all four quarters of 2016, and are in line for favorable earnings in the future. 2016 was a slower year for earnings according to Cirrus, who's yearly EPS were $2.69 in 2014, $2.67 in 2015, and $2.4 in 2016, with an estimated 4.35 in 2017 according to Bloomberg.

Competitors:

In the semiconductor industry, Cirrus experiences a great deal of pressure from its competitors. The biggest competitors to Cirrus are NXP Semiconductors, Qualcomm Inc., Realtek Semiconductor Corp., and Texas Instruments among others. Cirrus expects competition will continue to increase, but no single company competes with the company in all of their product lines. Within portable audio products, Cirrus is the established leader in supplying IC's, including codecs, DSP's, and MEM's. Cirrus' ability to compete effectively while expanding the business will depend on the ability to recruit key engineering talent, execute on new products and developments, partnering with customers to use these products and developments, while providing cost effective versions of the existing products. Cirrus depends on developing new technologies which offer optimal sound with low power, so for the start of 2016, it upped research and development by $71 million for a total of $269 million. Cirrus has been investing into R&D at around 10 percent of sales, which has almost tripled since 2012.

Mergers and Acquisitions:

Just as R&D is vital to the semiconductor industry, mergers and acquisitions are a natural part of this industry. In 2001, Cirrus announced that it would start focusing on semiconductors used in consumer entertainment devices. The company acquired private chip makers Peak Audio, LuxSonor, ShareWave, and Stream Machine. In 2003, Cirrus announced heavy job cuts and sold its chip testing to ChipPAC, which now supplies Cirrus with assembly, test, and packaging services. In 2005 Cirrus sold their digital video IC product line to Magnum Semiconductors for a minority stake in their business. The next year Cirrus acquired Caretta Integrated Circuits for $10 million cash, and Apex Micro the year after for $42 million cash. Apex Micro was a big win for Cirrus, as Apex already had 1,200 customers and $20 million in annual sales. However, Caretta was shut down only a year after the acquisition for a $12 million dollar loss. In April of 2014, Cirrus announced that it would purchase Wolfson Microelectronics for £278 million, or $467 million with a combination of cash and $225 in debt funding. CEO Jason Rhode says that Wolfson has a "rich history of audio innovation, a broad catalog of audio products and a first class customer list". The Wolfson acquisition strengthens Cirrus' ability to expand its customer base with highly differentiated end-to-end audio solutions for portable audio applications. After the merger, Cirrus restructured their corporate organization to focus on the international nature of the company's business activities.

Cash Flow Analysis:

Fiscal year is April-March. All values USD millions.	2012	2013	2014	2015	2016	5-year trend
Net Operating Cash Flow	83.2M	160.82M	228.04M	163.51M	155.28M	
Net Operating Cash Flow Growth	-	93.31%	41.79%	-28.30%	-5.03%	
Net Operating Cash Flow / Sales	19.49%	19.86%	31.92%	17.84%	13.28%	

Since the acquisition of Wolfson showed a negative change to cash, Cirrus has seen their cash balance increase by $45 million in 2015 and $92 million in 2016. This is despite a negative growth in free cash flow in the same periods. Cirrus has a strong net operating cash flow even with the acquisition of Wolfson. The year after the acquisition, Cirrus experienced a negative net operating cash flow growth mostly attributable to the heavy dip in net income. However, Cirrus has experienced a strong net operating cash flow over sales. This gives an important sign on the company's ability to turn revenues into cash. In the recent years, Cirrus has spent a considerable amount on capital expenditures, due to the fact that they are in the process of becoming a more global company. The slowdown of purchased investments has actually had a positive impact on net investing cash flow. In 2015, the company reported a loss of $324 million that year, mostly due to a $444 million loss from net assets from acquisitions. Cirrus has been selling of investments to combat this, and had their first positive year for net investing cash flow since 2012. Cirrus' net financing cash flow generally stays slightly negative, except in 2015 when the company issued $224 million in long-term debt. The financing cash flow hangs around the negatives because the company believes in repurchasing stock as an alternative to paying dividends, as well as paying off much of their debt. Cirrus had a D/E ratio of .238 in 2015, and it is currently .091. This is a great sign for investors because it signals that Cirrus thinks their stock is undervalued, and gives future stockholders a vote of confidence that there won't be a flooding of their shares.

Conclusion:

Cirrus Logic, Inc. has seen the ups and downs of the electronic era, but since 2011 the company's revenue has grown at a CAGR of 23.6 percent and net income has grown at a CAGR of 24.8 percent, which shows that they are beginning to become more profitable. During this same time, number of shares have decreased 4 percent. In a long-term perspective, Cirrus has the sound financial standing for a company that is heavily investing in R&D, under constant competitive pressure, and actively seeking companies to acquire. What will make this stock a true growth stock are the short-term catalysts including voice biometrics, relationship with Apple, and their ability to continue to roll out effective new products. Cirrus does face considerable competition from many different companies, but the fact that no other company competes with Cirrus in all their product lines, coupled with their vision for a more diverse product, geographical, and financial portfolio gives them more breathing room than the market currently views. In this industry product development can take a few years, and Cirrus has proven to be reliable to its customers. It has only been around 10 years that Cirrus has been making IC's, codecs, DSP's, and their new product SoundClear®. The demand for higher quality audio and applications, as well as the introduction of digital headsets have companies like Apple and Samsung very excited to work with Cirrus. As the amount of new products by Cirrus Logic increases, their ability to grow will be shown by the increase in stock price.

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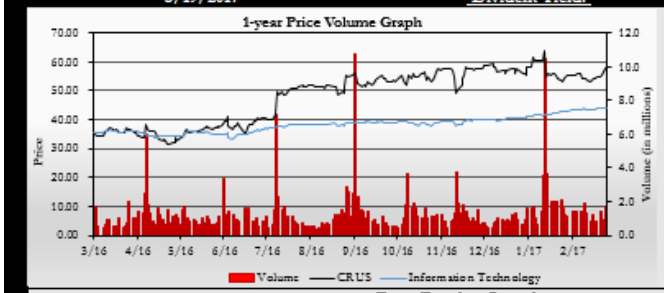
Cirrus Logic, Inc. (CRUS)

CENTER FOR GLOBAL FINANCIAL STUDIES

BULLISH

Analysis by John Garrity Jr	Current Price:	$58.43	Intrinsic Value	$74.45	Target 1 year Return: 44.61%
3/19/2017	Divident Yield:	0.3%	Target Price	$84.32	Probability of Price Increase: 100%



Description

Cirrus Logic, Inc., a fabless semiconductor company, develops, manufactures, and markets analog and mixed-signal integrated circuits (ICs) for a range of consumer and industrial markets.

General Information

Sector	Information Technology
Industry	Semiconductors and Semiconductor Equipm
Last Guidance	November 3, 2015
Next earnings date	April 19, 2017
Estimated Country Risk Premium	6.25%
Effective Tax rate	40%
Effective Operating Tax rate	42%

Market Data

Market Capitalization	$3,753.07
Daily volume (mil)	1.52
Shares outstanding (mil)	64.23
Diluted shares outstanding (mil)	66.14
% shares held by institutions	14%
% shares held by investments Managers	78%
% shares held by hedge funds	6%
% shares held by insiders	0.48%
Short interest	6.24%
Days to cover short interest	2.85
52 week high	$64.16
52-week low	$31.00
Levered Beta	0.28
Volatility	46.43%

Past Earning Surprises

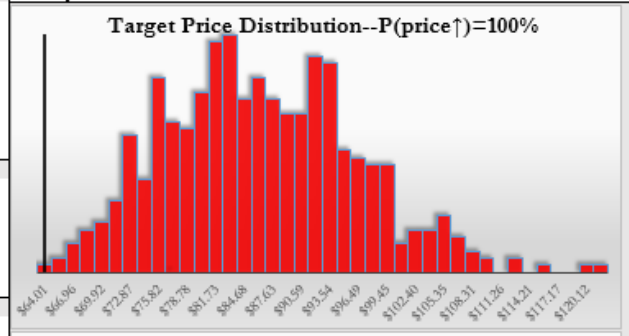
Quarter ending	Revenue	EBITDA
12/26/2015	0.25%	-12.40%
3/26/2016	-0.09%	-4.82%
6/25/2016	7.16%	-5.59%
9/24/2016	6.75%	2.22%
12/24/2016	4.91%	-0.69%
Mean	3.80%	-4.26%
Standard error	1.6%	2.5%

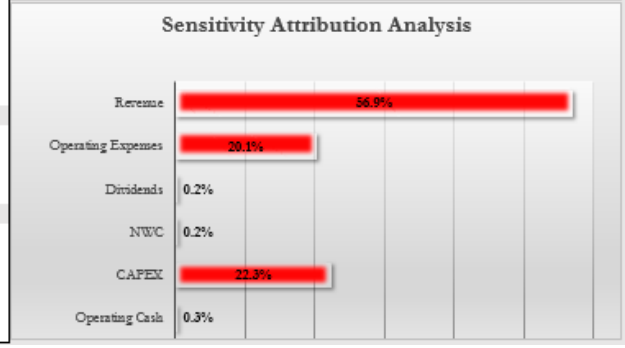
Peers

Xilinx, Inc.
Synaptics Incorporated
Skyworks Solutions, Inc.
Maxim Integrated Products, Inc.
Microchip Technology Incorporated
Silicon Laboratories Inc.
Cypress Semiconductor Corporation
Texas Instruments Incorporated

Management	Position	Total compensations grow	Total return to shareholders
Rhode, Jason	Chief Executive Officer, Pre	12.06% per annum over 6y	1.93% per annum over 6y
Case, Thurman	Chief Financial Officer, Pri	5.34% per annum over 6y	1.93% per annum over 6y
Thomas, Gregory	Vice President, Corporate Se	2.63% per annum over 6y	1.93% per annum over 6y
Brannan, Andrew	Vice President of Worldwide	-15.5% per annum over 2y	32.77% per annum over 2y
Anderson, Scott	Senior Vice President and Ge	2.12% per annum over 6y	1.93% per annum over 6y
Kaller, Roy	Vice President of Quality an	N/M	N/M

Profitability	CRUS (LTM)	CRUS (5 years historical av	Industry (LTM)
ROIC	25.3%	56.19%	9.78%
NOPAT Margin	22%	27.11%	16.4%
Revenue/Invested Capital	1.15	2.07	0.60
ROE	26.4%	43.44%	10.76%
Adjusted net margin	22%	26.93%	15.3%
Revenue/Adjusted Book Value	1.21	1.61	0.70
Invested Funds	**CRUS (LTM)**	**CRUS (5 years historical av**	**Industry (LTM)**
Total Cash/Total Capital	16.8%	17.4%	39%
Estimated Operating Cash/Total Capital	6.4%	6.0%	N/A
Non-cash working Capital/Total Capital	10.1%	9.9%	8%
Invested Capital/Total Capital	69.9%	66.8%	55%
Capital Structure	**CRUS (LTM)**	**CRUS (5 years historical av**	**Industry (LTM)**
Total Debt/Common Equity (LTM)	0.04	0.05	0.13
Cost of Existing Debt	2.70%	5.78%	3.32%
Estimated Cost of new Borrowing	4.58%	4.70%	3.32%
CGFS Risk Rating	CC	CC	BB
Unlevered Beta (LTM)	0.26	0.62	1.24
WACC	5.38%	7.84%	11.19%





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March, 17, 2017

Network-1 Technologies, Inc: NTIP

Mateo Valdivieso

Sector: Information Technology
Industry: Technology Hardware & Equipment

Company Description: Network-1 Technologies, Inc engages in the development and licensing intellectual property. It supports customers such as investors and patent owners by assisting the development and monetization of their patented technologies which include telecommunications and data networking technologies as well as technologies relating to document stream operating systems and the identification of media content.

BUY

Current Price:	$4.65
Target Price:	$6.41
Market Cap:	$106M
Beta:	.98

Thesis:

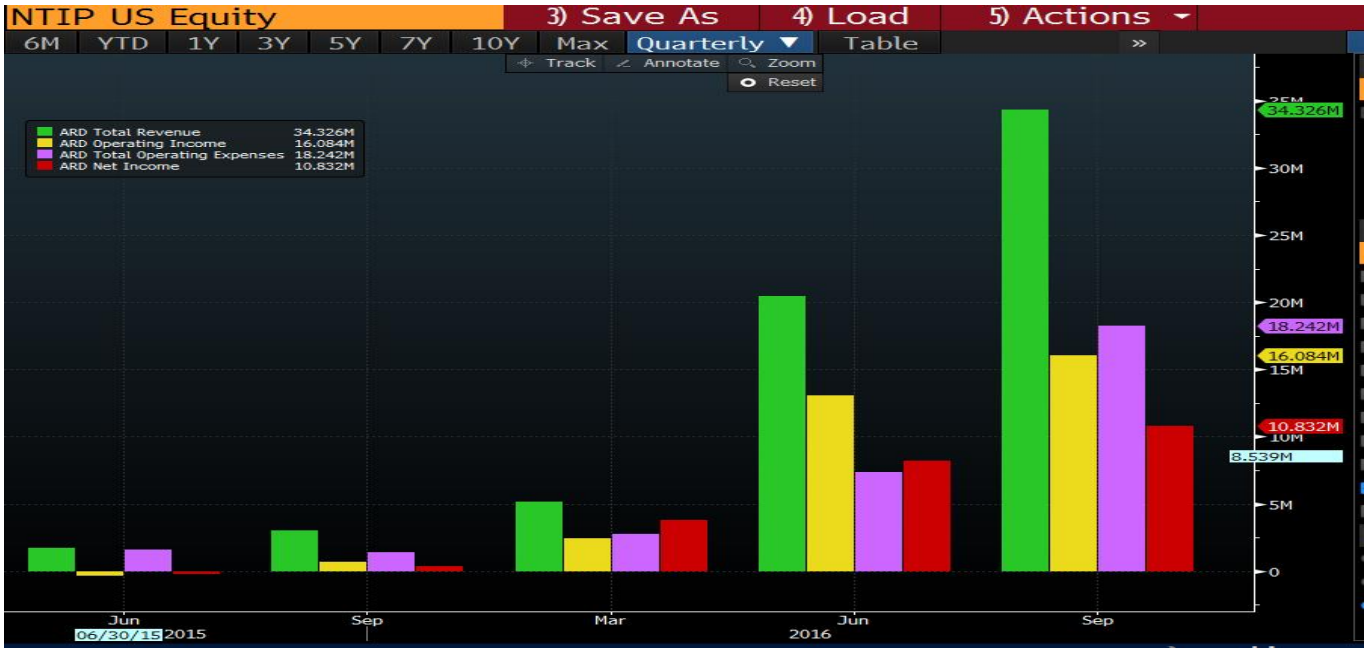
Network-1 Technologies is a strong microcap company who has no debt, strong balance sheet, consistent quarterly revenues for the past six years. Currently the company owns 28 patents which includes four main assets with high revenue potential such as Remote Power Patent, Mirror Worlds Patten, Cox patent and QoS patent. Major tech companies such as Apple, Google, Cisco and Microsoft to name a few have reached licensing agreements for NTIP patents. The company has a history of being in court for validation on their patents in which the courts have continued to rule on their side, thus proving there is value to be found from these patents that are wanted by tech industry giants as stated before. To be exact NTIP has initiated patent litigation for infringement for its Remote Power Patent with 16 data networking equipment manufacturers such as Dell, Hewlett Packard Company, Huawei Technologies, Motorola Solutions, Samsung Electronics and Sony electronics just to name a few but as recently reached a settlement agreement with Apple and Microsoft for their Mirror Worlds Patent. As of today, 12 out of the 16 companies have reached settlement and licensing agreements for NTIP Remote Power Patent.

Catalysts:

- **Pending litigation with 4 defendants on Remote Power Patent that are scheduled for trial later in March. Investors should expect future revenue generating settlements toward end of 2017.**
- **Markman Ruling against the remaining 4 defendants for the Remote Power Patent.**
- **Firms still owe ongoing royalty payments of around 12m-15m annually for the Remote Power Patent until the expiration of the patent in March 2020.**
- **Pending litigation trial for Cox Patent portfolio still in proceeding status but as of October 2016 the PTAB has ruled in favor of NTIP against defendants Google and YouTube.**

Earnings Performance:

The most recent report regarding NTIP evaluates the three months ended September 30th, 2016. The third quarter has been quite successful for NTIP it recorded record revenues of $34,326,000 for the three months ended September 30, 2016 as compared with revenue of $3,008,000 for the three months ended September 30, 2015. The tremendous increase of revenues of $31,318,000 for the three months ended September 30, 2016, was due primarily to additional licensing revenue of $32,900,000 from litigation settlements with Apple Inc. of $25,000,000, Dell, Inc. $6,000,000 and Alcatel and ALE USA Inc. $1,900,000. The revenue from royalty bearing licenses for patents has decrease $232,000 or 14% from $1,658,000 to $1,426,000 for the three months ended September 30, 2016 compared to the three months ended September 30, 2015. Operating expenses have increased considerably for the three months ended September 30th, 2016 were $18,242,000 as compared to $2,324,000 for the three months ended September 30, 2015. The increase in operating expenses of $15,918,000 was primarily due to increased costs of revenue related to our litigation settlements of an aggregate of $32,900,000 for the three month period ended September 30, 2016. Operating income was $16,084,000 for the three months ended September 30, 2016 compared with an operating income of $684,000 for the three months ended September 30, 2015. This also includes contingent legal fees and expenses of $13,273,000, other contractual payments of $1,641,000 and $2,029,000 of incentive bonus compensation payable to our Chairman and Chief Executive Officer. The increased operating income of $15,400,000 for the three months ended September 30, 2016 was primarily due to licensing revenue of $32,900,000 received from litigation settlements with Apple Inc. and Dell, Inc., Alcatel and ALE USA Inc. Net Income increased to $10,832,000 in September 2016 as compared to the $407,000 for the three months ended September 30th, 2015. This increase was primarily due to the increase in revenues for the litigation settlements.



Business Strategy:

NTIP currently owns twenty eight patents included as part of these are four main patent portfolio such as Mirror Worlds, Power over Ethernet, Cox and QoS patents. NTIP strategy is to capitalize on their intellectual property assets by entering into licensing arrangements with third parties including manufacturers and users that utilize our intellectual property's proprietary technologies as well as any additional proprietary technologies covered by patents which may be acquired by us in the future. NTIP acquisition strategy is to focus on acquiring high quality patents which management believes have the potential to generate significant licensing opportunities as has been the case with our Remote Power Patent. NTIP also has a strategic strategy with inventors and patent owners to assist in them in the development and monetization of their patent technologies. Included in this strategy is it has strategic plans to protect intellectual property assets, or the intellectual property assets of third parties with whom NTIP has strategic relationships in the future, NTIP believe it may be necessary to assert patent infringement claims against third parties whom are infringing on their patents or those of strategic partners.

Remote Power Patent:

The power over Ethernet patent relates to NTIP "Remote Power Patent" which covers a method for controlling the delivery of power over Ethernet cables, meaning it detects the amount of electricity needed to remotely power specific devices in an Ethernet network such as wireless access ports, IP phones and networked based cameras. This is accomplished by sending low level currents to a device. The current that results from this determines if said objects meet the requirements of a compatible Powered Device in a non-intrusive way, meaning electricity is delivered safely to these devices without being under powered or over powered. This patent is unique because of the methodology and technologies described within the remote power are also integrated into the PoE standard 802.3af set by The Institute of Electrical and Electronic Engineers. This sets a standard for all compliant products of this nature to utilize the detection methods that are covered by this patent. This patent has been true money maker of NTIP which has generated 100m up to date. NTIP has a knack for dragging large tech companies into court on the basis of infringement on their Remote Power Patent to be exact it has had litigation with sixteen data networking equipment manufacturers such as Alcatel-Lucent USA, Inc., Allied Telesis, Inc., Avaya Inc., AXIS Communications Inc., Dell, Inc., Garrett Com, Inc., Hewlett-Packard Company, Huawei Technologies USA, Juniper Networks, Inc., Motorola Solutions, Inc., NEC Corporation, Polycom Inc., Samsung Electronics Co., Ltd., ShoreTel, Inc., Sony Electronics, Inc., and Transition Networks, Inc. Out of these sixteen companies mentioned NTIP has reached settlement and license agreements with twelve out of the sixteen defendants, the remaining defendants include Avaya Inc., AXIS Communications Inc., Hewlett-Packard Company, and Juniper Networks Inc.
An overview of some settlement agreements are as followed, Alcatel and ALE for the fully-paid license was $4.3 million, Dell is obligated to pay a license initiation fee of $6 million and royalties based on its sales of PoE products, Polycom, Inc is obligated to pay a license initiation fee of $5 million for past sales of its Power over Ethernet ("PoE") products and will also pay ongoing royalties based on its sales of PoE products. NTIP has received positive ruling in regards to resolutions of the pending litigations by the courts in a Markman ruling where the court considered defendants' motion for Summary judgment that all claims of the Remote Power Patent are invalid for improper broadening. The court found that all of the original asserted claims of NTIP Remote Power Patent survived the Challenge of improper broadening. Thus proving NTIP has a positive outlook with its pending litigation with the remaining defendants. On top of the pending litigations settlements that can provide future revenue, NTIP is still owed royalty payments of around 12M-15M, for the remaining life of the Remote Power patents which is set to expire in March 2020. Cisco owes a substantial amount of annual royalty payments to NTIP of roughly 9M out of the total 12M-15M until the patent expires.

Mirror World Patent & Cox Patent Portfolios:

This portfolio covers technologies that enable unified search and indexing, displaying and archiving of documents in a computer system. This portfolio of patents has proved to have success in the courts when courts ruled in NTIP favor that Apple Inc. did infringe on the '227' patent which relates to an operating system in which documents are stored in a chronologically ordered "stream". In other words, that is, as each document is presented to the operating system, the document is placed according to a time indicator in the sequence of documents already stored relative to the time indicators of the stored documents. The terms of the settlement saw Apple pay 25M for permission to use the '227' patent as of July 2016. In 2015 Microsoft enter into a settlement agreement and nonexclusive license agreement for the '227' patent, where Microsoft was able to license the patent until it expired in 2016 which they paid NTIP 4.65M. NTIP also received a onetime payment of 17.5M form a settlement of a professional liability claim that relates to services rendered between 2008-2010 through its fully owned subsidiary Mirror World Technologies,LLC, NTIP acquired the claim as part of the Mirror World Portfolio Acquisition. This had seen NTIP around 47.5M form the Mirror Paten t Portfolio.

The Cox Portfolio includes 12 issued patents that relate to identifying or tagging uploaded media content and taking business actions based on the identification. For example, specific advertising insertions or offers to purchase goods or services related to identified or tagged content (e.g. music or videos) are covered by the Cox portfolio. This system can also be used to identify whether a newly received work is, in whole or in part, derived from an existing work – enabling the proper rights owner to profit from its distribution. Since December 2016 NTIP has added five new patents to bring its total Cox patent portfolio to 17 Patents. A year after acquiring its first patents NTIP initiated its first litigation in 2014 for infringement on this patent against Google and YouTube and claims these companies continue to infringe certain of NTIP patents by making, using, selling and offering to sell unlicensed systems and related products and services, which include YouTube's Content ID system. On April 2015 Google filed a Petition for Covered Business Method Review at the PTAB seeking to invalidate claims pertaining to the Company's U.S. Patent No. 8,904,46. However in October 2016 the Patent Trial and Appeal Board of the United States Patent and Trademark Office issued its Final Written Decision relating to a challenge made by Google and YouTube to the patentability of one of the patents of Network-1's Cox Patent Portfolio. In its Final Written Decision, the PTAB ruled that Google had failed to show that any of the thirty-four (34) claims of U.S. Patent 8,904,464 were un-patentable. The current case is undergoing a proceeding status, which could go into trial in 2018 if Google and YouTube don't decide to settle, however do to NTIP proven track record there is hope for investors to attain a settlement deal, the final written decision is a step forward towards this goal.

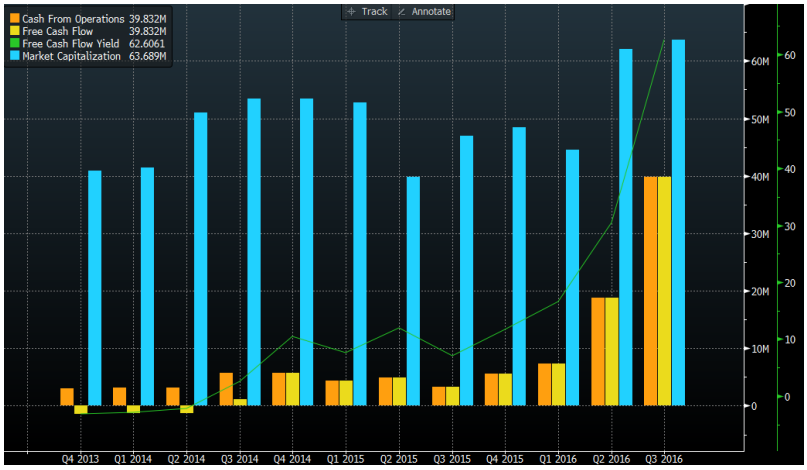
NTIP vs Competitors:

When taking a look at competitors by closest Market cap, around 110M within the Telecommunication Equipment subsector, NTIP 1yr performance has been on level with some of the competitors if not has performed better. Sales growth proves far superior as well as with EBITDA margin, Net Profit Margins, and ROIC. These comparisons show the profitability of NTIP which make it a compelling company. The increase in these profitability ratios have been due to the growth in revenue that NTIP has gained through its litigation settlements over the year. As stated before there are four litigations pending that are concluding in the end of March that can give investors an insight on how future profitability can be impacted if the court rules in NTIP favor, which looks more than likely. Asides from settlements revenues that NTIP can gain, we want to remember the royalties that will be included within these settlements that would be recurring revenues would also support NTIP profitability.

	Name	Sales Growth (%)	EBITDA Growth (%)	EBITDA Margin	Operating Income Margin	Net Income Growth (%)	Net Profit Margin	x/Sales (%)	Return on Invested Capital	Return on Assets	Return on
	Median	7.32%	5.62%	7.33%	4.07%	-18.06%	2.11%	1.16%	6.01%	2.42%	5.23%
100)	NETWORK-1 TECHNOLOGI...	466.95%	1.10k%	52.29%	50.51%	3.59k%	43.15%	--	57.24%	63.93%	72.99%
101)	IKEGAMI TSUSHINKI CO ...	2.93%	-47.37%	2.21%	-0.78%	--	-1.51%	1.31%	-2.04%	-1.28%	-3.19%
102)	NERA TELECOMMUNICATI...	4.59%	-47.56%	6.90%	4.09%	-74.95%	1.89%	4.23%	7.37%	2.30%	5.49%
103)	CHAMPION TECHNOLOGY ...	-46.49%	40.39%	78.04%	53.99%	-288.66%	-5.27%	0.21%	13.24%	-1.55%	-1.85%
104)	EZCONN CORPORATION	10.05%	44.81%	10.54%	8.58%	36.34%	7.36%	2.73%	10.49%	9.67%	15.57%
105)	CHINA TRENDS HOLDING...	-22.70%	--	--	-7.15%	-210.07%	-16.78%	0.00%	--	--	--
106)	HOTRON PRECISION ELEC...	20.44%	203.15%	15.09%	12.69%	266.39%	7.99%	1.99%	11.51%	7.87%	16.94%
107)	ALCATEL LUCENT TELETAS	17.03%	811.35%	7.46%	6.58%	--	9.53%	0.34%	47.03%	12.22%	51.47%
108)	DASAN ZHONE SOLUTION...	32.94%	-145.03%	-3.59%	-5.96%	-271.59%	-9.24%	0.81%	-18.40%	-12.19%	-24.26%

Cash Generation:

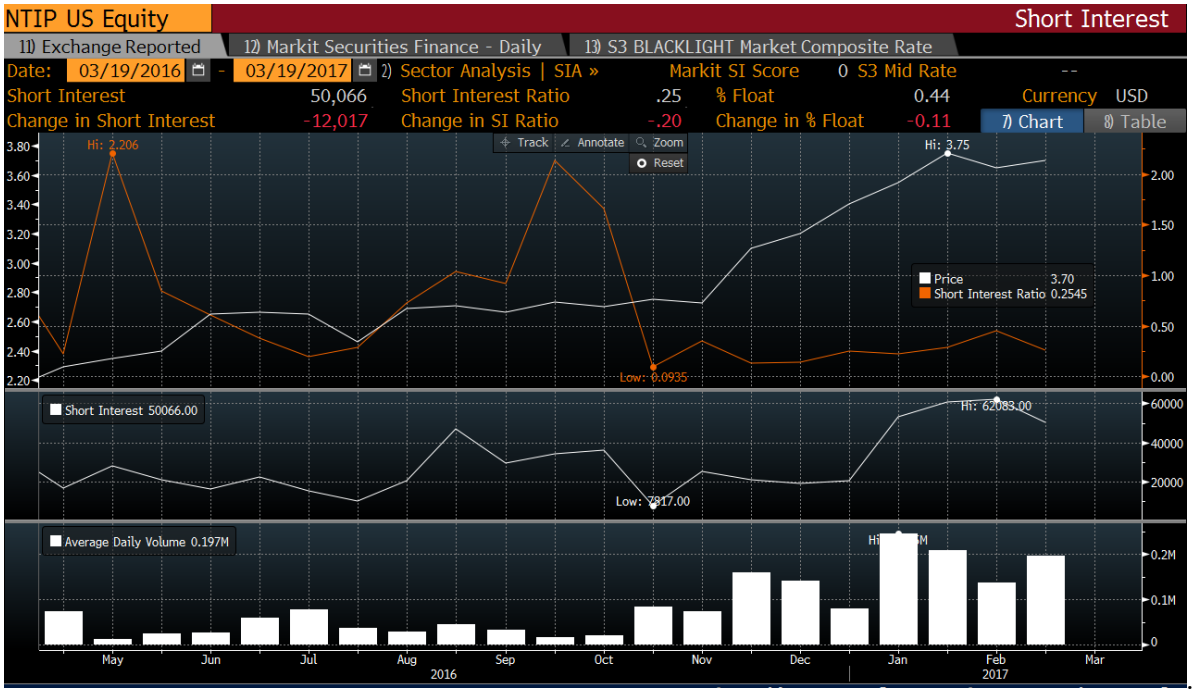
Looking into quarterly cash flow statements NTIP for the third quarter has generated $39.8m from operating cash flow, has no capital expenditures thus has free cash flow of 39.8M. The market cap for the third quarter was 63.68m, thus it gave us a FCF yield of 62.6% which shows that NTIP is 62.6% which means NTIP is generating 62.3% of its market cap in free cash flow. This FCF yield can also imply a low price free cash flow multiple, also when looking at the chart we see how the FCF yield has been improving while share prices are still relatively low thus it can serve as an indicator NTIP is selling at bargain price. The increased free cash flow generation seen here show signs of great value being created by the company. NTIP is a very liquid company, due to the amount of cash on hand that they have, though not mentioned in their earnings report, NTIP has sufficient cash to acquire another company that has revenue potential patents or greater patent portfolios and would not have to be funded by outside investors. Which could increase the overall value of the company.



Risk Factors:

The risks faced with NTIP should be a given due to its business of acquiring patents, monetizing and licensing them but also protect their patent. Scenarios to consider NTIP only asset that has recurring revenues would be the Remote power patent that has been subject to ongoing legal challenges, NTIP as mentioned before has a litigation pending against four companies for infringement on their Remote power patent which if the courts found invalid at some point it would deny NTIP of any future cash flows. However this Remote Power patent has gone legal review for over ten years and has proven time and time again its validity. As of recent NTIP has had a Markman ruling which favors the decision the courts will take when the remaining litigation against the four defendants concluded at the end of March, 2017. The second scenario would be a failure to win the current litigation with Google and YouTube over Cox patent portfolio however recently the PTAB has recently ruled in favor of NTIP, though still waiting for trial this shows a positive sign in the right direction for NTIP given its winning streak against giant Tech companies. NTIP has proven to be able to with stand a continued fight in court against goliath like companies for protections of its patents and thus I believe its proven track record and court favoring can take away all if not some doubts to investors who see these risk factors as a stay away from investing in NTIP.

Short Interest:



As stated before NTIP does hold risk, upon which investors should consider, however looking at the chart above we see the Short Interest Ratio is low and has decreased 20%. Moreover, looking at the volume being traded it has increased but also the short interest has decreased as the price increased, thus investors are feeling there could be a greater upside than downside. The stock price is trading near an all-time high, but short interest remains very low meaning many investors still see room for the price to increase.

Conclusion:

NTIP is great Microcap that has recorded a flawless winning record of litigation settlements against the goliaths of the tech industry. There current recurring revenues that they will receive until the end of the Remote Power paten life provides reassurance of revenue not based on only litigations. However as stated previously NTIP does pose that relate to these litigations and further protection of their patent. Nonetheless I feel optimistic about the pending litigations that are set to conclude by the end March 2017 in which I feel like NTIP track record will perceive through and allow them to get settlements and licensing agreements. Thus investors who plan to take a chance with this microcap have a chance achieve a satisfactory capital gain within a one to two year holding period.

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GENERAL INFORMATION	
Company Ticker	NTIP
Company Name	Network-1 Technologies, Inc.
Industry	Communications Equipment
Current Price	$4.70
Dividend Yield	2.13%

VALUATION SUMMARY	Intrinsic Value	Y-Target Price	1-year Div. Yield	1-y Target Return
Valuation based on UFCF	$ 6.46	$ 6.41	3.8%	42%
Valuation based on EVA	$ 6.46	$ 6.41	3.8%	40%
Valuation based on LFCF	$ 4.78	$ 4.74	3.8%	5%
Valuation based on RI	$ (2.99)	$ (28.15)	3.8%	-695%
Valuation based on Dividends	$ 3.45	$ 3.47	3.8%	-22%
"Implied" Valuation based on UFCF	$ 4.70	$ 4.46	3.8%	-1%
"Implied" Valuation based on LFCF	$ 4.70	$ 4.64	3.8%	2%

	Implied Value	Comments
Implied CP WACC	31.5%	The market adds a premium of 22% to the company WACC
Implied CP ROIC	-13.0%	The market' estimates of LT ROIC is higher by 69.7%
Implied CP ROIC/WACC	-0.41	The market is currently pricing LT value destruction
Implied CP Ke	9.6%	#NAME?
Implied CP ROE	12%	The market' estimates of LT ROE is higher by 94.5%
Implied CP ROE/Ke	1.22	The market is currently pricing LT value creation

CONCLUSION

GUIDANCE ANALYSTS' AVERAGE ESTIMATES						
	IQ_CQ+1	IQ_CQ+2	IQ_CQ+3	IQ_CQ+4	NTM	1-y Growth
Revenue	N/A	N/A	N/A	N/A	N/A	N/A
EBITDA	N/A	N/A	N/A	N/A	N/A	N/A
Operating Cost	N/A	N/A	N/A	N/A	N/A	N/A
Op Costs/Rev.	N/A	N/A	N/A	N/A	N/A	

	IQ_FY	IQ_FY+1	IQ_FY+2	IQ_FY+3	IQ_FY+4	CAGR over 0 Years
Revenue	$ 16.57	N/A	N/A	N/A	N/A	N/A
EBITDA	$ 10.15	N/A	N/A	N/A	N/A	N/A
Operating Cost	$ 6.42	N/A	N/A	N/A	N/A	N/A
Op Costs/Rev.	38.8%	N/A	N/A	N/A	N/A	

MONTE CARLO SIMULATIONS INPUT						
	Mean	Observations	Standard Error	Min	Max	Distribution
Revenue growth	3.0%	5.00	5.76%	-14.3%	20.3%	Normal
Op. Costs/Rev.	78.8%	5.00	1.90%	73.1%	84.5%	Normal
Dividends/Rev.	1.5%	5.00	1.77%	-3.8%	6.8%	Normal
NWC/Rev.	0.0%	5.00	5.81%	-17.4%	17.4%	Normal
NPPE/Rev.	3.0%	5.00	2.69%	-5.1%	11.1%	Normal
Kd	3.60%	4.00	0.57%	5.1%	8.9%	Triangular
βU	1.00	5.00	7.35%	77.9%	122.1%	Normal
D/E	0.20	5.00	5.76%	-2.5%	40.5%	Triangular
MRP	6.4%	N/A	N/A	5.8%	10.0%	Triangular
Tax Rate	37.50%	N/A	N/A	24.0%	40.0%	Triangular

COLOR CODE
CapitalIQ Input
Manual Input
Random Variable
Forecast Variable

ASSUMPTIONS

Income Statement	History	Last Reported	Industry (LTM)	Base Year	C.P.	Δ per Annum	Justification
Revenue growth	16.37%	466.9%	3.63%	3.2%	4.0%	0.0007	The base is set equal to analyst' estimates then it converges toward Real GDP
Operating Costs/Revenue	49.7%	23.7%	74.12%	79.3%	90.0%	0.0097	Remains somewhat constant
DPR(t)/NPPE(t-1)			29.63%	15.6%	15.6%	0.0000	Asset life is approximately 5 years
AM(t)/Intangibles(t-1)	270.7%	49.4%	6.13%	0.5%	0.5%	0.0000	None
INTINC(t)/[Excess Cash(t-1)+LTINV(t-1)]	0.2%	0.3%	0.96%	1.3%	1.0%	-0.0003	Converges toward risk free rate
Dividends/Revenue	0.0%	0.0%	4.39%	6.9%	1.5%	-0.0249	Remain Constant (justified by historical data)
Balance Sheet	**History**	**Last Reported**	**Industry (LTM)**	**Base year**	**C.P.**	**Δ per Annum**	**Justification**
NWC/Revenue	8.5%	0.0%	-7.23%	0.0%	0.0%	0.0000	Remains Constant
NPPE/Revenue	0.0%	0.0%	12.02%	15.4%	3.0%	-0.0113	Converges toward industry average
NONCA/Revenue	53.7%	0.7%	NC	-11.5%	-11.5%	0.0000	Revers to zero
Intangibles/revenue	30.3%	1.9%	55.14%	32.6%	32.6%	0.0000	None
Other	**History**	**Last Reported**	**Industry (LTM)**	**Base year**	**C.P.**	**Δ per Annum**	**Justification**
Risk Free Rate				3%	3%	0.0000	Assumed constant and equal to long term average 1-note rate
Market Risk Premium				6.73%	6.4%	-0.0003	Weighted Average Country Risk Premium in the US (64.9% of LFY Rev at 5.8%), Europe (28.6% of LFY Rev at 7.8%), other (11.8% of LFY Rev at 10%)
Tax Rate				37.50%	37.50%	0.0000	Weighed Average Effective Tax Rate in the US. (64.9% of LFY Rev at 40%), Europe (28.6% of LFY Rev at 22.09%), Other (11.8% of LFY Rev at 23.62%)
Kd			4.08%	3.60%	3.60%	0.0000	If it is capital structure and margins resembles the industry, its cost of debt should also resemble the industry
βU	-0.01	-0.40	0.80	0.36	1.00	0.0582	If it is capital structure and margins resembles the industry, its assets' systematic risk should also resemble the industry
D/E	0.00	0.00	0.21	0.20	0.20	0.0000	implied from CP ie. Debt in CP/terminal value of Equity (using LFCF)

Country Risk Premium	or by region =>
Tax Rate by Country	

Risk Premium by Region	
Africa	12.2%
Asia	9.3%
Australia & New Zealand	8.1%
Caribbean	11.0%
Central and South America	11.4%
Eastern Europe & Russia	10.2%
Middle East	8.2%
North America	5.8%
Western Europe	7.8%
Grand Total	10.0%

RE-ORGANIZED INCOME STATEMENT

	9/30/2011	9/30/2012	9/30/2013	9/30/2014	9/30/2015	9/30/2016	9/30/2017	9/30/2018	9/30/2019	9/29/2020	9/29/2021	9/29/2022	9/29/2023	9/28/2024	9/28/2025	9/28/2026	Continuing Period	
Revenue	$ 6.80	$ 8.60	$ 8.09	$ 11.84	$ 11.67	$ 66.15	$ 68.31	$ 70.60	$ 73.01	$ 75.56	$ 78.25	$ 81.10	$ 84.10	$ 87.28	$ 90.65	$ 94.21	$ 97.98	Revenue
Revenue growth		*26%*	*-6%*	*46%*	*-1%*	*467%*	*3%*	*3%*	*3%*	*3%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	Revenue growth
Operating Costs	$ (4.44)	$ (3.46)	$ (4.33)	$ (5.24)	$ (7.10)	$ (15.65)	$ (54.83)	$ (57.36)	$ (60.03)	$ (62.86)	$ (65.86)	$ (69.04)	$ (72.42)	$ (76.01)	$ (79.82)	$ (83.87)	$ (88.18)	Operating Costs
Operating Costs/Revenue		*40%*	*54%*	*44%*	*61%*	*24%*	*80%*	*81%*	*82%*	*83%*	*84%*	*85%*	*86%*	*87%*	*88%*	*89%*	*90%*	Operating Costs/Revenue
Depreciation expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (1.52)	$ (1.45)	$ (1.37)	$ (1.28)	$ (1.19)	$ (1.09)	$ (0.99)	$ (0.87)	$ (0.74)	$ (0.61)	Depreciation expense
DPR(t)/NPPE(t-1)							*16%*	*16%*	*16%*	*16%*	*16%*	*16%*	*16%*	*16%*	*16%*	*16%*	*16%*	DPR(t)/NPPE(t-1)
EBITA	$ 2.36	$ 5.14	$ 3.75	$ 6.61	$ 4.57	$ 50.50	$ 13.48	$ 11.72	$ 11.53	$ 11.33	$ 11.11	$ 10.86	$ 10.59	$ 10.29	$ 9.96	$ 9.59	$ 9.19	EBITA
Tax Rate	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*	*37.50%*	*37.5%*	*37.5%*	*37.5%*	*37.5%*	*37.5%*	*37.5%*	*37.5%*	*37.5%*	*37.5%*	*38%*	Tax Rate
NOPAT	$ 1.47	$ 3.21	$ 2.35	$ 4.13	$ 2.85	$ 31.56	$ 8.42	$ 7.32	$ 7.21	$ 7.08	$ 6.94	$ 6.79	$ 6.62	$ 6.43	$ 6.22	$ 6.00	$ 5.74	NOPAT
Amortization expense	$ (0.01)	$ (0.01)	$ (0.67)	$ (1.57)	$ (1.66)	$ (1.18)	$ (0.01)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	Amortization expense
AM(t)/Intangibles(t-1)		*12%*	*1000%*	*29%*	*42%*	*49%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	AM(t)/Intangibles(t-1)
Interest Expenses	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (0.00)	$ (0.00)	$ (0.00)	$ (0.00)	$ (0.00)	$ (0.00)	$ (0.00)	$ (0.00)	$ (0.00)	$ (0.00)	Interest Expenses
Interest Income	$ 0.06	$ 0.03	$ 0.04	$ 0.04	$ 0.05	$ 0.06	$ 0.64	$ 0.61	$ 0.61	$ 0.64	$ 0.67	$ 0.70	$ 0.74	$ 0.78	$ 0.81	$ 0.85	$ 0.89	Interest Income
INTINC(t)/[Excess Cash(t-1)+LTINV(t-1)]		*0.1%*	*0.19%*	*0.19%*	*0.26%*	*0.13%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	INTINC(t)/[Excess Cash(t-1)+LTINV(t-1)]
Other NO income and Expenses .	$ (1.34)	$ (1.79)	$ (1.85)	$ (2.68)	$ (3.78)	$ (17.67)	$ (8.83)	$ (4.42)	$ (2.21)	$ (1.10)	$ (0.55)	$ (0.28)	$ (0.14)	$ (0.07)	$ (0.03)	$ (0.02)	$ (0.01)	Other NO income and Expenses .
Net Income	$ 0.67	$ 2.11	$ 0.80	$ 1.50	$ (0.52)	$ 19.83	$ 3.30	$ 4.94	$ 6.21	$ 6.79	$ 7.01	$ 7.05	$ 6.99	$ 6.87	$ 6.71	$ 6.52	$ 6.29	Net Income
E&D Income (expense)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	E&D Income (expense)
Minority Interets Income or (Expense)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	Minority Interets Income or (Expense)
Dividends	$ -	$ -	$ -	$ -	$ -	$ -	$ (4.38)	$ (4.18)	$ (3.96)	$ (3.73)	$ (3.48)	$ (3.21)	$ (2.91)	$ (2.59)	$ (2.25)	$ (1.88)	$ (1.47)	Dividends
Dividend/Revenue	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*6.4%*	*5.9%*	*5.4%*	*4.9%*	*4.4%*	*4.0%*	*3.5%*	*3.0%*	*2.5%*	*2.0%*	*2%*	Dividends/Revenue
Additions to RE	$ 0.67	$ 2.11	$ 0.80	$ 1.50	$ (0.52)	$ 19.83	$ (1.08)	$ 0.77	$ 2.25	$ 3.06	$ 3.54	$ 3.85	$ 4.08	$ 4.28	$ 4.46	$ 4.64	$ 4.82	Additions to RE

RE-ORGANIZED BALANCE SHEET

	9/30/2011	9/30/2012	9/30/2013	9/30/2014	9/30/2015	9/30/2016	9/30/2017	9/30/2018	9/30/2019	9/29/2020	9/29/2021	9/29/2022	9/29/2023	9/28/2024	9/28/2025	9/28/2026	Continuing Period	
Total Cash	$ 23.07	$ 22.77	$ 20.12	$ 19.71	$ 19.09	$ 58.86	$ 48.88	$ 50.38	$ 53.42	$ 57.31	$ 61.75	$ 66.56	$ 71.67	$ 77.06	$ 82.72	$ 88.64	$ 8.33	Total Cash
Excess Cash	$ 22.29	$ 22.77	$ 20.12	$ 19.71	$ 19.09	$ 50.18	$ 48.88	$ 50.38	$ 53.42	$ 57.31	$ 61.75	$ 66.56	$ 71.67	$ 77.06	$ 82.72	$ 88.64	$ 8.33	Excess Cash
Operating cash	$ 0.78	$ -	$ -	$ -	$ -	$ 8.68		0	0	0	0	0	0	0	0	0	$ -	Operating cash
Operating Current assets (X cash)	$ 1.17	$ 1.56	$ 1.33	$ 1.48	$ 1.82	$ 1.43	$ 1.48	$ 1.53	$ 1.58	$ 1.64	$ 1.70	$ 1.76	$ 1.82	$ 1.89	$ 1.97	$ 2.04	$ 2.12	Operating Current assets (X cash)
Operating Current Assets	$ 1.96	$ 1.56	$ 1.33	$ 1.48	$ 1.82	$ 10.11	$ 1.48	$ 1.53	$ 1.58	$ 1.64	$ 1.70	$ 1.76	$ 1.82	$ 1.89	$ 1.97	$ 2.04	$ 2.12	Operating Current Assets
Operating Current Liabilities	$ 1.96	$ 0.67	$ 0.57	$ 0.65	$ 0.96	$ 10.11	$ 1.48	$ 1.53	$ 1.58	$ 1.64	$ 1.70	$ 1.76	$ 1.82	$ 1.89	$ 1.97	$ 2.04	$ 2.12	Operating Current Liabilities
NWC	$ (0.00)	$ 0.89	$ 0.76	$ 0.82	$ 0.85	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	NWC
NWC/Revenue		*10.3%*	*9.4%*	*7.0%*	*7.3%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0%*	NWC/Revenue
NPPE	$ -	$ -	$ -	$ -	$ -	$ -	$ 9.75	$ 9.28	$ 8.77	$ 8.23	$ 7.64	$ 7.00	$ 6.32	$ 5.57	$ 4.76	$ 3.89	$ 2.94	NPPE
NPPE/Revenue		*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*14.3%*	*13.1%*	*12.0%*	*10.9%*	*9.8%*	*8.6%*	*7.5%*	*6.4%*	*5.3%*	*4.1%*	*3%*	NPPE/Revenue
ONCA	$ 6.88	$ 6.21	$ 6.02	$ 4.15	$ 3.83	$ 0.43												ONCA
ONCL	$ -	$ -	$ -	$ -	$ -	$ -												ONCL
NONCA	$ 6.88	$ 6.21	$ 6.02	$ 4.15	$ 3.83	$ 0.43	$ (7.86)	$ (8.12)	$ (8.40)	$ (8.69)	$ (9.00)	$ (9.33)	$ (9.67)	$ (10.04)	$ (10.42)	$ (10.83)	$ (11.27)	NONCA
NONCA/Revenue		*72.3%*	*74.5%*	*35.0%*	*32.9%*	*0.7%*	*-11.5%*	*-11.5%*	*-11.5%*	*-11.5%*	*-11.5%*	*-11.5%*	*-11.5%*	*-11.5%*	*-11.5%*	*-11.5%*	*-12%*	NONCA/Revenue
Invested Capital	$ 6.88	$ 7.10	$ 6.78	$ 4.97	$ 4.69	$ 0.43	$ 1.89	$ 1.16	$ 0.38	$ (0.46)	$ (1.36)	$ (2.32)	$ (3.36)	$ (4.47)	$ (5.66)	$ (6.95)	$ (8.33)	Invested Capital
LT Investments	$ -	$ -	$ 0.20	$ 0.48	$ 0.19	$ -												LT Investments
Intangibles	$ 0.08	$ 0.07	$ 5.38	$ 3.99	$ 2.38	$ 1.25												Intangibles
Intangibles/Revenue		*0.8%*	*66.2%*	*33.7%*	*20.4%*	*1.9%*	*32.6%*	*32.6%*	*32.6%*	*32.6%*	*32.6%*	*32.6%*	*32.6%*	*32.6%*	*32.6%*	*32.6%*	*33%*	Intangibles/Revenue
Total Capital	$ 29.24	$ 29.93	$ 32.45	$ 29.15	$ 26.35	$ 51.86	$ 50.78	51.54	53.79	56.85	60.39	64.24	68.32	72.60	77.06	81.70	$ 0.00	Total Capital
Debt	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	Debt
PE&MI	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	PE&MI
CS&PI&T&O	$ 57.81	$ 59.76	$ 61.28	$ 61.06	$ 61.43	$ 61.78	$ 61.78	$ 61.78	$ 61.78	$ 61.78	$ 61.78	$ 61.78	$ 61.78	$ 61.78	$ 61.78	$ 61.78	$ 61.78	CS&PI&T&O
Retained Earnings	$ (28.56)	$ (29.83)	$ (28.83)	$ (31.91)	$ (35.09)	$ (9.92)	$ (11.00)	$ (10.23)	$ (7.98)	$ (4.92)	$ (1.39)	$ 2.46	$ 6.54	$ 10.82	$ 15.28	$ 19.92	$ 24.75	Retained Earnings
BV of Common Equity	$ 29.24	$ 29.93	$ 32.45	$ 29.15	$ 26.35	$ 51.86	$ 50.78	$ 51.54	$ 53.79	$ 56.85	$ 60.39	$ 64.24	$ 68.32	$ 72.60	$ 77.06	$ 81.70		BV of Common Equity
Total Invested Funds	$ 29.24	$ 29.93	$ 32.45	$ 29.15	$ 26.35	$ 51.86	$ 50.78	$ 51.54	$ 53.79	$ 56.85	$ 60.39	$ 64.24	$ 68.32	$ 72.60	$ 77.06	$ 81.70	$ 0.00	Total Invested Funds
Does total capital equal to invested funds?	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	Does total capital equal to invested funds?

INTERMEDIATE COMPUTATIONS FROM PROFORMA STATEMENTS: MARGINS, CAPITAL STRUCTURE, WACC, ROE, ROIC (RETAINED, ETC)

	9/30/2011	9/30/2012	9/30/2013	9/30/2014	9/30/2015	9/30/2016	9/30/2017	9/30/2018	9/30/2019	9/29/2020	9/29/2021	9/29/2022	9/29/2023	9/28/2024	9/28/2025	9/28/2026	Continuing Period	
Diluted Shares Outstanding	30.31	29.12	27.66	28.07	24.66	24.57	24.57	24.57	24.57	24.57	24.57	24.57	24.57	24.57	24.57	24.57		Diluted Shares Outstanding
NOPAT Margin	22%	37%	29%	35%	24%	48%	12%	10%	10%	9%	9%	8%	8%	7%	7%	6%	6%	NOPAT Margin
Net Margin	10%	25%	10%	13%	-4%	30%	5%	7%	9%	9%	9%	9%	8%	8%	7%	7%	6%	Net Margin
Total Debt	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	Total Debt
Tangible Book Value of Equity	$ 29.17	$ 29.87	$ 27.09	$ 25.16	$ 23.97	$ 50.61	$ 50.78	51.54	53.79	56.85	$ 60.39	$ 64.24	$ 68.32	$ 72.60	$ 77.06	$ 81.70	$ -	Tangible Book Value of Equity
Market Capitalization	$ 34.62	$ 34.79	$ 43.76	$ 53.76	$ 47.08	$ 63.66											$ 122.18	Market Value of Equity
D/E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	D/E
βL	0.43	0.01	-0.03	0.42	-0.43	-0.40	0.42	0.48	0.53	0.59	0.65	0.71	0.77	0.83	0.88	0.94	1.00	βL
βU		0.01	-0.03	0.42	-0.43	-0.40	0.42	0.48	0.53	0.59	0.65	0.71	0.77	0.83	0.88	0.94	1.00	βU
Kd							4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	Kd
Ke							5.7%	6.0%	6.4%	6.8%	7.2%	7.5%	7.9%	8.3%	8.7%	9.0%	9%	Ke
WACC							5.68%	6.05%	6.42%	6.79%	7.17%	7.34%	7.91%	8.28%	8.66%	9.03%	9%	WACC
Rev/IC(t-1)							157.40	37.27	62.85	199.72	-170.03	-59.69	-36.22	-26.00	-20.29	-16.64	-14.11	Rev/IC(t-1)
ROIC							1940.6%	386.7%	620.6%	1872.1%	-1508.6%	-499.6%	-285.0%	-191.6%	-139.3%	-105.9%	-82.90%	ROIC
ROE							1940.65%	386.70%	620.61%	1872.06%	-1508.57%	-499.64%	-285.01%	-191.61%	-139.34%	-105.92%	-82.90%	ROE
UFCF							6.96	8.06	7.99	7.92	7.84	7.75	7.65	7.54	7.42	7.28	6.46	UFCF
LFCF							7.36	8.44	8.38	8.32	8.26	8.19	8.11	8.03	7.93	7.81	6.60	LFCF
EVA							8.40	7.21	7.13	7.06	6.98	6.89	6.80	6.71	6.61	6.51	6.40	EVA
RI							979.35	193.28	316.57	1,003.39	(861.75)	(306.28)	(188.17)	(136.56)	(107.44)	(88.57)	(75.25)	RI
Dividends							4.38	4.18	3.96	3.73	3.48	3.21	2.91	2.59	2.25	1.88	6.60	Dividends

DCF VALUATION

	9/30/2016	9/30/2017	9/30/2018	9/30/2019	9/29/2020	9/29/2021	9/29/2022	9/29/2023	9/28/2024	9/28/2025	9/28/2026	Terminal Value	
Net Claims On the firm's EV	$ (50.18)	$ (48.88)	$ (50.38)	$ (53.42)	$ (57.31)	$ (61.75)	$ (66.56)	$ (71.67)	$ (77.06)	$ (82.72)	$ (88.64)		Net Claims On the firm's EV
PV(UFCF)	$ 109.41	$ 108.65	$ 107.17	$ 106.06	$ 105.34	$ 105.05	$ 105.22	$ 105.89	$ 107.12	$ 108.97	$ 111.52	$ 111.52	PV(UFCF)
Valuation based on UFCF	$ 6.50	$ 6.41	$ 6.41	$ 6.49	$ 6.62	$ 6.79	$ 6.99	$ 7.23	$ 7.50	$ 7.80	$ 8.15		Valuation based on UFCF
PV(EVA)	$ 108.97	$ 106.76	$ 106.01	$ 105.68	$ 105.80	$ 106.41	$ 107.54	$ 109.24	$ 111.58	$ 114.63	$ 118.47	$ 118.47	PV(EVA)
Valuation based on EVA	$ 6.50	$ 6.41	$ 6.41	$ 6.49	$ 6.62	$ 6.79	$ 6.99	$ 7.23	$ 7.50	$ 7.80	$ 8.15		Valuation based on EVA
PV(LFCF)	$ 117.71	$ 117.03	$ 115.67	$ 114.72	$ 114.20	$ 114.13	$ 114.54	$ 115.48	$ 117.02	$ 119.22	$ 122.18	$ 122.18	PV(LFCF)
Valuation based on LFCF	$ 4.79	$ 4.76	$ 4.71	$ 4.67	$ 4.65	$ 4.65	$ 4.66	$ 4.70	$ 4.76	$ 4.85	$ 4.97		Valuation based on LFCF
PV(RI)	$ 326.94	$ (633.85)	$ (865.47)	$ (1,237.62)	$ (2,325.09)	$ (1,629.95)	$ (1,446.54)	$ (1,372.80)	$ (1,349.94)	$ (1,339.34)	$ (1,393.49)	$ (1,393.49)	PV(RI)
Valuation based on RI	$ 15.37	$ (23.74)	$ (33.13)	$ (48.19)	$ (92.34)	$ (63.89)	$ (56.27)	$ (53.10)	$ (52.00)	$ (52.20)	$ (53.40)		Valuation based on RI
PV(DIV)	$ 84.47	$ 84.89	$ 85.84	$ 87.39	$ 89.60	$ 92.54	$ 96.31	$ 101.01	$ 106.79	$ 113.78	$ 122.18	$ 122.18	PV(DIV)
Valuation based on Dividends	$ 3.44	$ 3.46	$ 3.49	$ 3.56	$ 3.65	$ 3.77	$ 3.92	$ 4.11	$ 4.35	$ 4.63	$ 4.97		Valuation based on Dividends

IMPLIED VALUATION

	9/30/2016	9/30/2017	9/30/2018	9/30/2019	9/29/2020	9/29/2021	9/29/2022	9/29/2023	9/28/2024	9/28/2025	9/28/2026	Terminal Value	
Compounded Discount Factor (WACC)		*0.95*	*0.89*	*0.84*	*0.79*	*0.73*	*0.68*	*0.63*	*0.58*	*0.54*	*0.49*		*Compounded Discount Factor (WACC)*
Compounded Discount Factor (Ke)		*0.95*	*0.89*	*0.84*	*0.79*	*0.73*	*0.68*	*0.63*	*0.58*	*0.54*	*0.49*		*Compounded Discount Factor (Ke)*
Implied PV(UFCF)	$ 65.28	$ 62.02	$ 57.72	$ 53.43	$ 49.14	$ 44.82	$ 40.44	$ 35.99	$ 31.43	$ 26.73	$ 21.86	$ 21.86	Implied PV(UFCF)
Implied Price per share	$ 4.70	$ 4.51	$ 4.40	$ 4.35	$ 4.33	$ 4.34	$ 4.36	$ 4.38	$ 4.42	$ 4.46	$ 4.50		Implied Price per share
Implied PV(LFCF)	$ 115.46	$ 114.65	$ 113.15	$ 112.04	$ 111.33	$ 111.05	$ 111.21	$ 111.91	$ 113.15	$ 115.02	$ 117.59	$ 117.59	Implied PV(LFCF)
Implied Price per share	$ 4.70	$ 4.67	$ 4.61	$ 4.56	$ 4.53	$ 4.52	$ 4.53	$ 4.56	$ 4.61	$ 4.68	$ 4.79		Implied Price per share