

## Applied Investment Management (AIM) Program

### AIM Class of 2018 and Class of 2019 Equity Fund Reports Spring 2018

*Date: Friday, February 9<sup>th</sup> | Time: See Schedule Below | Location: AIM Research Room 488*

9:00 AM Presenter	Company Name	Ticker	Sector	Page
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3:00 PM Presenter	Company Name	Ticker	Sector	Page
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These student presentations are an important element of the applied learning experience in the AIM program. The students conduct fundamental equity research and present their recommendations in written and oral format – with the goal of adding their stock to the AIM Equity Fund. Your comments and advice add considerably to their educational experience and is greatly appreciated. Each student will spend about 5-7 minutes presenting their formal recommendation, which is then followed by about 8-10 minutes of Q & A.

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## Nutrisystem, Inc (NTRI)

February 9, 2018

Tom Borin

Domestic Consumer Staples

*Nutrisystem, Inc. (NASDAQ: NTRI) is a provider of weight management products and services. The products include nutritionally balanced meals sold mainly online and over the phone, single items and multi-day kits sold at select retailers across the country, and digital tools to assist weight loss. Nutrisystem manufactures and distributes portion-controlled meals and shakes for breakfast, lunch, dinner, and snacks. The company also provides weight loss programs designed for men, women, and seniors looking to live a healthier life style as well as programs specifically created for customers with Type 2 diabetes in order to help manage and reduce the effects of the disease. Nutrisystem operates solely in the United States. The company was founded in 1971 and is headquartered in Fort Washington, PA.*

Price (\$):	41.45	Beta:	0.62	FY: Dec	12/31/2015	12/31/2016	12/31/2017	12/31/2018
Price Target (\$):	59.12	M-Term Rev. Gr Rate Est:	33.2%	Revenue (Mil)	462.61	545.45	707.35	862.97
52WK H-L (\$):	67.95 - 32.65	M-Term EPS Gr Rate Est:	26.0%	% Growth	14.77	17.91	29.68	22.00
Market Cap (mil):	1,245	Debt/Equity:	0.0	Oper Inc	40.01	54.04	77.01	103.71
Insider Holdings	1.16%	Debt/EBITDA (ttm):	0.00	% Growth	36.81	35.08	42.49	34.67
Avg. Daily Vol (mil):	0.4	WACC	8.80	Op Margin	8.65	9.91	10.89	12.02
Yield (%):	1.7	ROA (%):	33.08	EPS*	\$0.62	\$1.21	\$1.69	\$2.69
ESG Rating	A	ROE (%):	50.13	P/E (Cal)	24.3	29.1	25.18	15.82
		ROIC (%):	50.13	EV/EBITDA	12.5	14.6	14.61	13.83

### Recommendation

Nutrisystem specializes in providing its customers convenient and fully prepared nutritionally balanced meals delivered directly to their doorstep. NTRI's programs offer more than 150 different menu options including flash-frozen meals, ready-to-go entrees, snacks, and shakes. They also provide expert counseling through trained counselors, registered dieticians, and certified diabetes educators to keep their members on their desired weight loss track. The company is consistently adding new products to their menu, adding 19 new menu items for the 2018 diet season. NTRI also acquired South Beach Diet in 2015, which has allowed the company to pursue multi brand solutions to increase revenues. Nutrisystem received recognitions from *U.S. News and World Report* for Best Commercial Diet (#5) and Best Fast Weight Loss Diet (#7). They also received recognition for Best Diabetes Diet. The South Beach Diet received recognitions for Best Commercial Diet (#7). The company uses a variety of marketing techniques to increase sales and build out its brand identity. Analytics-based marketing allow the company to personalize marketing efforts to each customer. According to Lake Street Capital both sales to new customers and sales to re-activated customers are growing at double digit rates, proving the company's extensive marketing techniques are paying off. The company's Nutrisystem D program is specifically designed to help customers with Type 2 diabetes. Studies on the program have shown statistically significant and clinically meaningful weight loss and improvements in HbA1c (a key measure of blood glucose control). According to Global Data the Type 2 diabetes therapeutics market is currently 26.8 billion and is expected to reach 45.1 billion by 2020. This growing market will provide higher demand for the program in the coming years. In the first three quarters of 2017 NTRI recorded sales of 565.72 million, already surpassing total sales from 2016. The company is forecasted to 707.35 million in sales in 2017, representing a 29.65% increase in revenue. Due to the variety of programs offered, acquisition of South Beach Diet, and strong diabetes services it is recommended that Nutrisystem, Inc. be added to the AIM Small Cap Equity Fund with a price target of \$59.12, representing a potential upside of 38.78%. The firm pays a dividend that currently yields 1.7%.

### Investment Thesis

- **Low Cost.** Traditional weight loss programs require brick and mortar diet centers to sell their products and services to their customers. This results in high fixed costs and capital investment. NTRI sells the 91% of their products over the phone or online. This allows the company to reduce

fixed costs and capital investments. Also, unlike Weigh Watchers, NTRI does not charge a membership fee. NTRI's basic meal plan costs \$278.99, this is \$25-\$40 cheaper than the basic plans of competitor. Due to the company's low-cost structure they are able to have little to no long-term debt on their balance sheet. NTRI also reduces costs by outsourcing the production of their food products to a variety of vendors and 100% of their fulfillment operations are outsourced to a third-party provider.

- **Highly Scalable:** The weight management market NTRI operates in is poised to grow in the next two decades. According to the Center for Disease Control and Prevention approximately 70% of the United States population is considered obese or overweight. The number of obese Americans is expected to increase by 32 million by 2030. Approximately 50% of the overweight or obese population is actively trying to lose weight at any given time. This increase in obesity among Americans will create high demand for NTRI's products in the coming years.
- **Acquisition of South Beach Diet.** Nutrisystem acquired South Beach Diet in 2015, and home delivery service for the diet began in 2016. South Beach diet is expected to contribute \$26 million of revenue for 2017. NTRI will benefit from a second fully developed offering going into the diet season of 2018. Increased advertising expenditures resulted in increased rates of customer acquisition for the new diet program. This contributed to high top and bottom line growth adding approximately 26 million to revenue in 2017. Management intends to continue spending in this area which I believe will result in even faster growth.

### Valuation

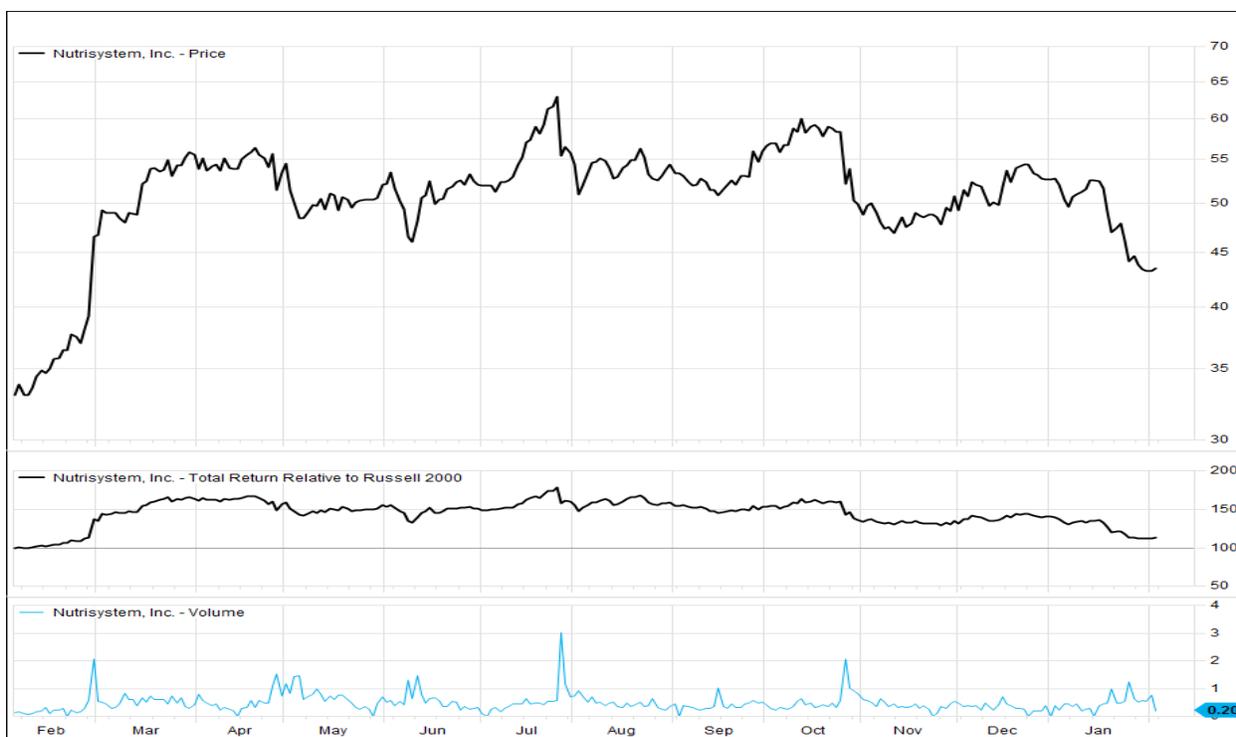
In order to reach an intrinsic value for NTRI a five year DCF model was constructed. Using a terminal value of 2.5% and a WACC of 8.8%, an intrinsic value of \$56.15 was reached. Additionally, a P/E multiple valuation was calculated. Using a 2018 estimated EPS of \$2.69 and utilizing a blended average P/E multiple of 34.65x, an intrinsic value of \$93.31 was reached. Finally, an EV/EBITDA multiple valuation was conducted using a blended average EV/EBITDA multiple of 13.83x, resulting in an intrinsic value of \$52.43. By weighing the three models 70/10/20, a price target of \$59.12 was reached, resulting in a 38.78% upside. NTRI pays a 1.7% annual dividend.

### Risks

- **Dependence on few suppliers.** Although NTRI is able to save money by outsourcing food production they also become dependent on suppliers. The company receives 11% and 9% of supplies purchased from its top 2 suppliers. If these two suppliers are gripped with issues in their supply chain, then this could cause a disruption in NTRI's ability to supply its customers.
- **Highly Competitive Industry.** The weight management industry is highly competitive with few barriers to entry. If a new company with financial backing and a similar product enters the market, NTRI's business could be significantly affected
- **Government Regulations.** Advertising in the weight loss industry is highly regulated by the FTC. If NTRI is believed to not be following FTC guidelines then new liabilities, adverse publicity, and restriction of business operations could occur. The industry is also highly regulated by the FDA. If regulation of the industry increases NTRI may incur significant expenses, as well as be forced to modify business operations

### Management

Dawn Zier has been the CEO and President of NTRI since 2012. Prior to her work at the company Ms. Zier was Executive Vice President at RDA holding Co. Ms. Zier is also on the board of Hain Celestial Group and Spirit airlines. Michael Hagan has been the Chairman of the company since 2012. Prior to his work at the company he served as President and CEO of Lifeshield Inc. Michael Monahan has been the CFO since 2013. Prior to his work at NTRI he served as CFO at PetroChoice Holdings.



Source: FactSet

#### Peer Valuation

Name	Ticker	Market Cap (mil)	P/S	P/E	EV/EBIT DA	P/B
Nutrisystem, Inc.	NTRI	1,245	1.86	22.65	14.68	9.32
Weight Watchers International, Inc.	WTW	4,069	3.41	37.54	9.87	
Planet Fitness, Inc. Class A	PLNT	2,730	6.62	40.20	9.93	86.80
GrubHub, Inc.	GRUB	5,973	9.91	64.86	24.10	5.70
Medifast, Inc.	MED	793	2.81	32.73	10.55	7.32
		3,391	5.69	43.8	13.61	25.86

#### Peer Fundamentals

Name	Ticker	Revenues	ROE	ROA	Debt/Equi ty	Est 5 yr NI growth
Nutrisystem, Inc.	NTRI	1245.12	42.78	24.76	0.00	67.97
Weight Watchers International, Inc.	WTW	4069.26	-9.61	5.03		-16.58
Planet Fitness, Inc. Class A	PLNT	2730.47	-36.06	4.25		32.90
GrubHub, Inc.	GRUB	5973.29	5.90	4.79	11.82	64.68
Medifast, Inc.	MED	792.89	19.32	14.95	26.24	2.35
	Peer Averages	3391.48	-5.11	7.26	19.03	20.84

Source: Factset

## Nicolet Bankshares, Inc. (NCBS)

February 9, 2018

Robert Dickey

Domestic Financials

*Nicolet Bankshares, Inc. (NASDAQ: NCBS) operates as a holding company for Nicolet National Bank, a full-service community bank, providing a range of commercial and retail banking services throughout northeastern and central Wisconsin and the upper peninsula of Michigan. NCBS's principle business consists of lending and deposit gathering, and other banking related products and services to businesses and individuals. Loan breakdown is commercial (53% of loans), residential real estate loans (26%) and CRE (20%). NCBS also owns an investment advisory firm and offer wealth management services (4% of total revenue). NCBS delivers its products and services through 38 bank branch locations, on-line banking, and mobile banking apps. NCBS went public in 2013 and is located in Green Bay, Wisconsin.*

Price (\$):	53.40	Beta:	0.44	FY: Dec	FY2016	E2017	E2018	E2019
Price Target (\$):	62.86	M-Term Rev. Gr Rate Est:	13.29%	Revenues	94,807	132,474	150,323	165,415
52WK H-L (\$):	45.00 - 61.98	M-Term EPS Gr Rate Est:	9.97%	% Growth	25%	40%	13%	10%
Market Cap (mil):	543.20	Financial Leverage	11.42%	Net Interest Income	68,133	98,235	106,823	112,900
Insider Holdings	35.64%	Cost of Equity	5.41%	%Growth	62%	44%	9%	6%
Avg. Daily Vol (mil):	21,899.00	ROA (%):	1.26%	Net Interest Margin	4.01%	4.30%	4.02%	4.03%
Yield (%):	-	ROE (%):	10.36%	Efficiency Ratio	68%	61%	61%	60%
ESG Rating	-	Tier 1 Capital Ratio (%)	12.50%	P/E	20.12	16.44	15.21	13.83
		Credit Provisions/Loans (%)	0.12%	P/B	1.48	1.48	1.35	1.23

### Recommendation

NCBS successfully competes with larger regional banks with competitive pricing, personalized service and community engagement. Individuals and small businesses often choose to do business with smaller banks because of these reasons Community banks offer the same services as larger banks at lower costs and better rates and have higher sources of fee income from services such as wealth management. NCBS banks with individual customers and commercial businesses in manufacturing, food production, and agriculture sectors. NCBS ranks seventh in market share of deposits in Wisconsin and has been growing steadily since its IPO in March 2013. Interest income has grown at a CAGR of 20% over the past 5 years. Through the first three quarters of 2017, assets, loans and deposits have grown 24%, 31% and 20%, respectively. Growth in recent years can be attributed to a combination of solid organic growth and M&A. In 2016, NCBS merged with Baylake Corp. (EV/Sales of 5.1x) which nearly doubled the size of NCBS and added two more Wisconsin counties to its footprint. The merger added assets of \$1.0 billion, loans of \$0.7 billion and deposits of \$0.8 billion to NCBS's balance sheet. In April 2017, NCBS closed on its acquisition of First Menasha Bancshares, Inc. for \$74 million. This acquisition resulted in the addition of five branches in the Fox Valley region of which First Menasha had the fourth largest market share in deposits. First full quarter results following the Menasha acquisition resulted in the highest quarterly EPS of \$0.91 since NCBS became public. NCBS's 2016 merger with Baylake Corp and its 2017 acquisition of First Menasha Bancshares have positioned NCBS as the leading independent bank in the demographically attractive areas of Green Bay and the Fox Valley. Due to good economic growth in Wisconsin, management's focus on growth of wealth management, and the company's buyout potential, it is recommended that NCBS be added to the AIM Small Cap Portfolio with a target price of \$62.97, yielding a 15.75% upside. NCBS does not currently pay a dividend.

### Investment Thesis

- Economic Growth Initiative and the Yield Curve.** In 2016, the Greater Green Bay Chamber engaged with TIP Strategies, an Austin-based economic development consulting firm, to assist with the preparation of an economic development strategic plan for the region. The program aims to work with community leaders in manufacturing and other industries to spur job creation. In 2017, Wisconsin has seen unemployment drop to 3.2% marking a 17-year low. Labor

participation continued to outpace the United States at 68.6% versus 62.9%. In addition to these positive microeconomic factors, the current spread between the 2-year and 10-year treasury bonds is the lowest it has been in 10 years (60 bps). With rates expected to rise, this spread is expected to normalize which would cause margins on lending to increase, generating a larger and more efficient bottom-line for NCBS.

- **Focus on Wealth Management.** Investment in wealth management continues to pay off with total revenues for Q3 of \$3.0 million – up 26% from the same quarter in 2016. After speaking on the phone with the head of investor relations, it appears wealth management will be NCBS's fastest growing business over the next five years. The First Menasha Acquisition bodes well for this shift in focus by management as cities in the Fox Valley market are among the largest and have median household incomes in line with the rest of Wisconsin (about \$55K). Also, management disclosed in its most recent 10-K that NCBS engaged in a private transaction to hire a select group of financial advisors and purchase their books of business and operating platform. Brokerage fees were \$3.6 million, up \$3 million in 2016 directly related to the hiring of the financial advisors and books of business acquired and the Baylake merger.
- **Potential Buyout.** NCBS occupies a sweet-spot market value in the consolidating banking industry. NCBS is in a position to be bought out by a larger bank like BMO or JPM because of its expansion into new markets and its solid position in established markets. EV/Sales multiples for recent M&A deals in banking have seen an uptick. After evaluating five recent transactions of relative market value to NCBS, an EV/Sales multiple of 5.45x was obtained. By multiplying this multiple by NCBS's total revenue for 2017, PV reached a projected takeover price of \$83.06.

### Valuation

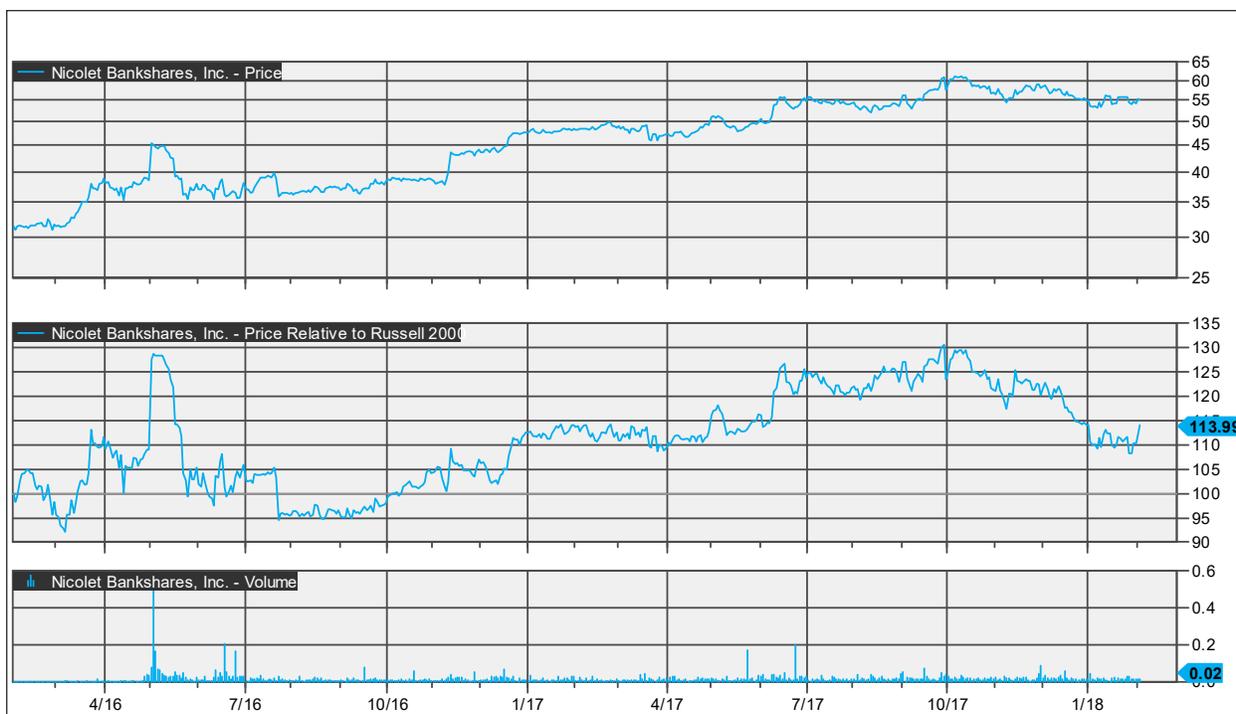
To reach an intrinsic value for NCBS, a ten-year excess earnings model was constructed as well as a P/E and P/B multiples valuations. Using a terminal growth of 2.5%, and COE of 5.41%, an intrinsic value of \$62.54 was reached with the excess earnings model. A sensitivity analysis was run with LT growth  $\pm 1\%$  and COE  $\pm 1\%$  which yielded a price range of \$47.23 - \$73.33. Using P/E and P/B peer average multiples of 20.20x and 1.59x, respectively, generated intrinsic values of \$67.25 and \$59.12. Weighing the excess earnings and multiple valuations each by 33/33/33, a price target of \$62.97 was attained, yielding an upside of 15.75%.

### Risks

- **Economic Environment.** NCBS operates primarily in Wisconsin and the bank's business is subject to its economic environment. If the communities in which NCBS operates do not grow or if the prevailing economic conditions are less favorable than assumed, NCBS's ability to maintain a low volume of non-performing loans and their business strategies may be adversely affected. The core industries in NCBS's market are manufacturing, wholesaling, food production, and agriculture to name a few. A material decline in any of these sectors may have a negative impact on profitability.
- **Competition.** NCBS competes with large, established banks such as BMO, JPM, PNC and others. The banking and financial services industry is undergoing rapid technological changes, with frequent introductions of new technology-driven products and services. Future success for the firm will depend, in part, upon their ability to update technology for the convenience of customers and cost efficiency. Failure to effectively implement new technology-driving products and services could reduce their ability to compete.

### Management

NCBS has the same management team since its founding in 2000. Robert B. Atwell serves as the Chairman, CEO and President of Nicolet Bankshares, Inc. Atwell has served these roles since he co-founded the company in 2002. He has over 30 years' experience as a Wisconsin banker.



<u>Name</u>	<u>Ticker</u>	<u>Net Margin</u>	<u>ROE</u>	<u>ROA</u>	<u>NPL</u>	<u>NI Growth</u>
Nicolet Bankshares, Inc.	NCBS	4.30%	10.36	1.26	0.69%	79.56%
Waterstone Financial, Inc.	WSBF	3.00%	6.31	1.44	#N/A	1.75%
Heartland Financial USA, Inc.	HTLF	4.04%	8.69	0.83	0.98%	-6.36%
Bank First National Corporation	BFNC	3.52%	10.59	1.00	#N/A	2.68%
County Bancorp Inc	ICBK	3.11%	7.66	0.79	1.01%	-2.52%
Allegiance Bancshares, Inc.	ABTX	4.34%	6.01	0.66	0.60%	-22.84%
Peer Averages		3.60%	7.85	0.94	0.86%	-5.46%

Source: Factset

<u>Name</u>	<u>Ticker</u>	<u>Market Cap</u>	<u>P/E</u>	<u>P/B</u>	<u>P/TBV</u>	<u>Div Yld</u>
Nicolet Bankshares, Inc.	NCBS	543	16.54	1.48	2.29	0.00
Waterstone Financial, Inc.	WSBF	508	17.82	1.35	1.23	2.79
Heartland Financial USA, Inc.	HTLF	1,541	19.36	1.71	2.14	0.86
Bank First National Corporation	BFNC	308	18.85	1.88	2.21	1.39
County Bancorp Inc	ICBK	191	19.30	1.41	1.42	0.83
Allegiance Bancshares, Inc.	ABTX	523	25.65	1.62	1.99	0.00
Peer Averages		602	20.20	1.59	1.9	1.7

Source: Factset

## Nippon Telegraph and Telecom Corp. (NTTY)

February 9, 2017

Thomas Dietz

International Technology

*Nippon Telegraph and Telecom (NYSE: NTTYY) is the largest Japanese telecommunications company and the fourth largest telecommunications company in the world. Nippon operates through five major segments – mobile (40% of revenue), regional communications, including fixed line (23%), long distance and international (18%), integrated telecom solutions (14%), and other (5%). NTTYY serves 75 million individual, business, university, and government agency customers with telecom solutions and services. NTTYY went public in 1987 and is headquartered in Tokyo, Japan.*

Price (\$):	47.80	Beta:	0.70	FY: Dec	2017A	2018E	2019E	2020E
Price Target (\$):	55.65	M-Term Rev. Gr Rate Est:	1.9%	Revenue (bn)	103.6	106.6	108.1	109.3
52WK H-L (\$):	53.54 - 39.96	M-Term EPS Gr Rate Est:	3.8%	% Growth	-1.3%	2.9%	1.4%	1.1%
Market Cap (bn):	98	Debt/Equity:	0.31	Oper Inc (bn)	15.4	14.7	15.6	15.7
Insider Holdings	38.5%	Debt/EBITDA (ttm):	2.42	% Growth	14.9%	-0.5%	6.1%	1.2%
Avg. Daily Vol (000):	70.0	WACC	5.91%	Op Margin	14.9%	13.8%	14.4%	14.4%
Yield (%):	2.6%	ROA (%):	4.7%	EPS	4.05	4.35	4.61	4.66
ESG Rating	A	ROE (%):	9.3%	P/E (Cal)	11.8	11.0	10.4	10.2
		ROIC (%):	6.9%	EV/EBITDA	8.2	8.6	8.1	8.0

### Recommendation

Nippon Telegraph and Telecom is a well-established global telecommunications powerhouse that is positioned to be at the forefront of the data driven revolution. NTTYY is moving into the future with a strengthened international presence and several innovative partnerships. NTTYY has grown its international business by a CAGR of approximately 8% a year, the company's highest growth area. The international venture focuses heavily on mobile communications and wireless data services, which has the highest operating margins of any segment at 20.1%. Nippon specializes in providing high speed access nationwide to consumers and businesses at excellent prices. NTTYY has recently moved to a wholesale business model for its optical fiber line, drastically reducing sales and marketing expenses. The company partners with high profile groups like the International Olympic Committee, the Japanese Cabinet Office, and the Japanese Professional Soccer League to build smart infrastructure that streamlines everyday Japanese life. With the combination of new business initiatives, prudent cost reductions, and strategic partnerships, it is recommended that NTTYY be added to the AIM International Equity Fund with a price target of \$55.65. NTTYY currently pays a dividend yielding 2.6%.

### Investment Thesis

- B2B2X Opportunity.** B2B2X stands for Business to Business to End User. Nippon Telegraph and Telecom (the first B) wants to support service providers (the second B) by equipping them with ultra-high speed data transmission from end users' devices (the X). This ultra-high speed data transmission will allow service providers to use artificial intelligence to analyze data faster than ever, giving end users up to date information on their wearable technology and other devices (Apple Watches, electronic insulin pumps). NTTYY has also partnered with professional racecar drivers to measure biological performance during races. Additionally, the B2B2X model can be used to enhance sports viewing experiences by helping sports fans and vendors wirelessly connect at stadiums. NTTYY is partnering with the Japanese Professional Soccer League to build the world's first smart stadiums. Partnering with the J League is a precursor to the 2020 Olympic Games in Tokyo, where Nippon will fully deploy its Smart Stadium Experience.
- Powerful Infrastructure and Customer Resources.** Nippon Telegraph and Telecom is the number one Japanese telecom company in terms of revenue, customer base and market cap. They provide fiber optic services to 20mm people and mobile services to 75mm people annually, which

accounts for 68% of all Japanese citizens 15 and over. Nippon T&T also boasts an industry leading churn rate of 0.69%, a testament to NTTYY's loyal customer base. NTTYY serves 88 of the Fortune 100 Global companies, who both employ NTTYY for their industry leading data speeds and their network of 30,000 cybersecurity experts. Nippon T&T has also recently partnered with the Japanese Cabinet Office to plan the building of "Society 5.0" – an ultra-connected society where data-driven decisions help government serves citizens to the best of its ability.

- **Hikari Collaboration.** The Hikari Collaboration is a venture whereby NTTYY's fiber optic business provides services at wholesale rates, significantly increasing the number of businesses with access to ultra-high speed data transmission while simultaneously cutting costs. This will revolutionize the consumer health care industry, allowing health monitoring devices, remote diagnosis and health/health consultation, and diet/exercise advice to connect to consumers' devices through cloud services. In 2015, Nippon T&T set a goal of reducing yearly costs by 5.5bn USD through its wholesale measures in its fixed line and mobile businesses by 2018. In 1Q2017, those costs had been reduced by 5.9bn USD, with 1Q2018 savings projected to be 7.5bn USD. Capital expenditures are another target for cost reduction, and by 2018, annual expenditures will be 1.8bn USD lower than their 2015 numbers.

### Valuation

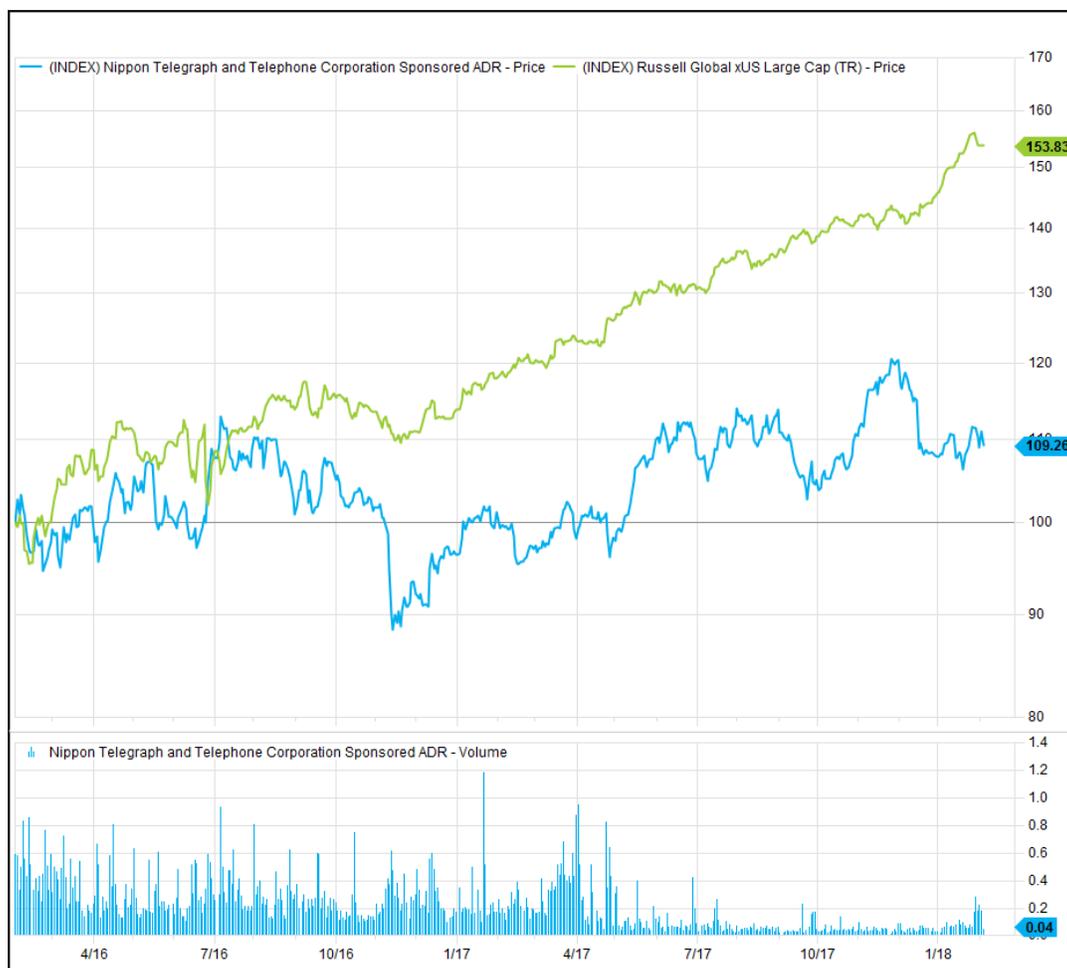
To find an intrinsic value for NTTYY, a five year DCF was constructed. With a WACC of 5.91% and a terminal growth rate of 1.00%, an intrinsic value of \$54.99 was reached. A sensitivity analysis with WACC ranging from 5.41% - 6.41% and a terminal growth rate of 0.75% - 1.25% gave target prices ranging from \$47.87 – \$64.61. A comp P/E multiple was calculated with a market cap weighted P/E average of 15.2x and 2017 EPS results of \$4.05, giving a target price of \$61.31. A forward P/E valuation was also calculated, combining the current P/E of 11.8x with 2018 EPS numbers of \$4.35, yielding a price target of \$51.27. Weighting the models 50/25/25, a price target of \$55.65 was reached, which represents a 16.4% upside. NTTYY pays a dividend of 2.6%.

### Risks

- **Aging Population.** The aging of Japan's population has been well documented. Land line use, constituting 10% of total revenues, will decrease approximately 7% a year for the next five years. Also concerning is the potential shortage of workers in Japan's already low unemployment economy, which is compounded by the high demand for skilled technology and infrastructure employees. Furthermore, it is unknown how the large elderly population will react to new ideas including the Smart Stadium and Society 5.0.
- **Cyber Attacks.** The past decade has seen a massive increase in both third party and state sponsored cyber-attacks. Key pieces of infrastructure in developed nations are prime targets for malicious hackers. Nippon employs a highly talented cyber security team, but the risk of damaging breaches always remains.
- **International Competition.** While NTTYY is unrivaled in its home country, it faces a stiffer challenge abroad. Other major telecoms already have a strong international presence, and other non-telecom tech companies like Amazon and Google are investing in cloud service businesses.

### Management

Satoshi Miura is the Chairman of the Board. He has been with Nippon Telegraph and Telephone for 51 years and has served in personnel, industry relations, and corporate strategy positions. Hiroo Unoura is the president and CEO of NTTYY and has been with the company since 1973, leading divisions across the company and its subsidiaries.



Name	Ticker	Market Cap	P/E	P/B	P/TBV	Div Yld
Nippon Telegraph and Telecom	NTTYY-US	100,900	11.8	1.20	1.58	2.60%
AT&T	T-US	223,000	18.1	1.80	-	5.30%
Deutsche Telecom AG	DTE-DE	1,082	14.0	2.40	-	2.60%
Verizon	VZ-US	219,900	7.3*	5.1*	-	4.40%
China Mobile	CHL-US	215,100	13.2	1.40	-	3.10%
KDDI Corp	KDDIY-US	66,327	12.7	1.90	3.33	2.20%
Peer Averages		145,081.8	15.2	1.6	-	4%

Source: FactSet  
\*removed for valuation

Name	Ticker	Revenues (mm USD)	ROE	ROA	Debt/Equity	Est 5 yr NI growth
Nippon Telegraph and Telecom	NTTYY-US	105,200.0	9.2	4.7	45.9	-5.0%
AT&T	T-US	160,000.0	10.6	3.2	100.3	26.9%
Deutsche Telecom AG	DTE-DE	93,500.0	9.1	1.8	66.0	-0.2%
Verizon	VZ-US	126,000.0	91.74*	12.0	271.7	1.7%
China Mobile	CHL-US	119,300.0	11.6	7.5	1.1	5.5%
KDDI Corp	KDDIY-US	43,850.0	16.5	9.6	32.4	-0.7%
Peer Averages		108,530.0	11.8	7.7	116.6	10%

Source: FactSet

## Alarm.com Holdings, Inc. (ALRM)

February 9, 2018

Alex Czachor

Domestic Technology

*Alarm.com Holdings, Inc. (NASDAQ: ALRM) is a platform solution for the connected property. The company offers a suite of cloud-based solutions for the smart home and business applications, including interactive security, video monitoring, intelligent automation and energy management. ALRM operates through two segments; Alarm.com (~92% of FY'16 revenue) and Other (~8%). The Alarm.com segment represents its cloud-based platform for the connected home and related connected home solutions. Its Other segment is focused on researching and developing home and commercial automation and energy management products. ALRM was founded in 2000 and is currently headquartered in Vienna, VA.*

Price (\$):	\$ 35.94	Beta:	0.78	FY: Dec	2016A	2017E	2018E	2019E
Price Target (\$):	\$ 45.87	M-Term Rev. Gr Rate Est:	14.0%	Revenue (Mil)	261.0	333.8	382.4	436.0
52WK H-L (\$):	26.91-49.49	M-Term EPS Gr Rate Est:	11.7%	% Growth	24.9%	27.9%	14.6%	14.0%
Market Cap (mil):	1,801	Debt/Equity:	3.50%	Oper Inc	43.6	63.4	85.3	100.0
Insider Holdings	4.28%	Debt/EBITDA (ntm):	0.07x	Op Margin	16.7%	19.0%	22.3%	22.9%
Avg. Daily Vol (mil):	0.7	WACC	9.79%	EPS (adj.)	\$0.64	\$0.89	\$1.12	\$1.25
Yield (%):	0.00%	ROA (%):	12.57%	P/E (Cal)	55.85x	42.80x	35.60x	33.47x
ESG Rating	B	ROE (%):	16.01%	EV/EBITDA	33.84x	22.99x	20.64x	17.96x
		ROIC (%):	11.72%	FCF/share	\$0.53	\$0.67	\$1.06	\$1.55

### Recommendation

Homes around the world are becoming smarter and are likely to be even more connected over the next five years. For example, according to the Consumer Technology Association, 2018 sales of smart products within connected homes will reach 40.8M units, while generating approximately \$4.5B in revenues, representing 41% and 34% YoY growth, respectively. In addition, Gartner estimates that 15% of homes globally – up to 230M homes – will be intelligently connected by 2020. Through its SaaS-based, cloud platform in which enable home and business owners to automate and control their security systems, the firm is well positioned to capitalize on the strong industry trends. In the near term, it is expected that additional customers within the North American residential segment will be the main driver of growth. Management has noted that the residential North American opportunity should drive mid- to high- teen subscription growth rates, estimated at 5-6% YoY. In addition, over the next several years additional growth opportunities will be driven by expansion into the small business and international markets, in which currently represent 5.5% and 1% of total subscriptions, respectively. Additionally, within ALRM's customer base, there is potential for customers to uptake additional services driving increases in average revenue per user (ARPU). Video in particular has been a driver of growth within additional services, currently only used by 21% of their total customer base, representing an opportunity for further growth. Looking further down the road, the company also stands to benefit from its expansion into the commercial space as this market typically generates up to 2x the ARPU relative to residential. This segment could potentially serve as a long-term growth catalyst due to the upcoming launch of Card Access as well as through the recently acquired Commercial Video. Moving into FY18, the company stands to benefit greatly from the recent tax reform in which reduced the corporate tax rate to 21%. Estimated to add up to \$9M to the company's 2018E bottom line as well as increase 2018E operating cash flows by \$6M, acting as a catalyst for the upcoming year. ALRM's highly scalable and leading SaaS platform positions the company well to capitalize on the growing smart home market within North America, as well as to further its expansion into the commercial and international markets, while also benefiting from the reduction in the corporate tax rate. Due to these reasons it is recommended that ALRM be added to the AIM small cap equity fund with a target price of \$45.87, representing a 27.63% upside. ALRM does not pay a dividend.

## Investment Thesis

- **Sizeable North America Residential Opportunity.** Currently ALRM has one of the largest platforms within the connected home marketplace with >5M subscribers. Over the next several years there is a significant opportunity to add customers within the U.S. residential market. According to Parks Associates, there are approximately 8M smart security systems and 14M traditional systems in the U.S. - and by 2021 the mix is estimated to grow to 16M smart systems compared to 10M traditional systems. Due to this strong growth forecast, coupled with management's expectations, it is reasonable to estimate that the company will be able to grow its subscription revenue in the mid- to high teens organically over the next several years through the residential NA market alone.
- **Long-Term Expansion Opportunities.** As of FY'16 approximately 5-6% of ALRM's subscribers were commercial in nature; however, the company has been focused on growing this business through the launch of new products such as access control. ALRM's continued commitment to adding business functionality to its platforms will drive this segment to be a substantial part of the company's business in the future. Management has commented that it believes there are 4M properties in which ALRM's business solutions can target in the US and could further benefit due to the 2x ARPU in which commercial generates relative to residential.
- **Passing of New Tax Legislation.** ALRM stands to benefit significantly from the reduction in the federal corporate income tax rate from 35% to 21% due to its history of profitability as well as its almost exclusive exposure to the U.S. This reduced tax rate resulted in an additional \$9M in non-GAAP net income as well as an 11% increase in 2018E operating cash flows (~\$6M increase) when compared with the previous 35% rate. Moving forward, in a highly active consolidation industry ALRM sits well to continue its expansionary efforts through inorganic means.

## Valuation

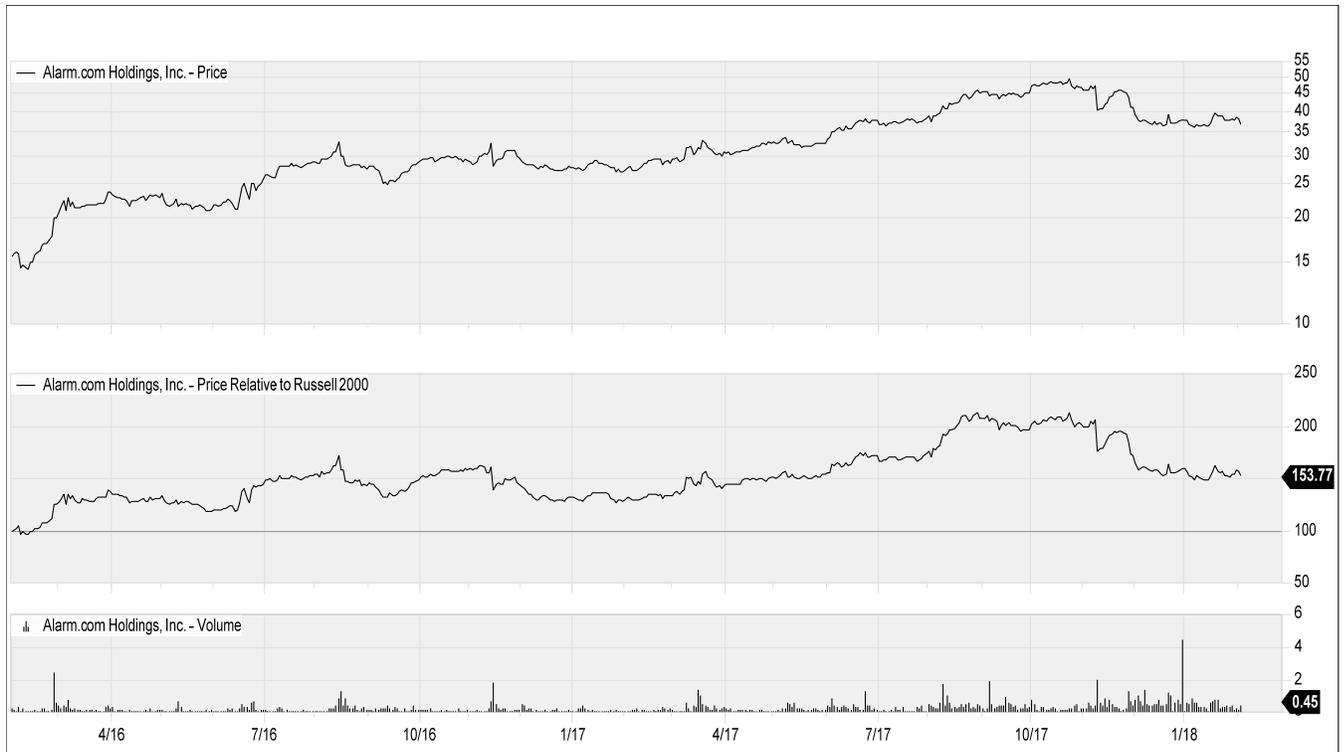
In order to reach an intrinsic value for ALRM, a ten-year DCF model was constructed. Using a terminal growth rate of 3% and a WACC of 9.79%, an intrinsic value of \$38.06 was reached. Additionally, an EV/EBITDA multiple valuation was conducted using ALRM's NTM peer average of 27.75x and ALRM's 2018E EBITDA per share of \$1.81 resulting in a valuation of \$50.26. Finally, an EV/Sales multiple valuation was calculated using a NTM peer average of 6.2x and a 2018E EV of \$2,364.2B, resulting in a valuation of \$50.46. Weighting the three valuation models equally, 33/33/33, a price target of \$45.87 was reached, representing a 27.63% upside. The firm does not pay a dividend.

## Risks

- **Threat of AMZN's Entrance into the Market.** Recently AMZN has attempted to enter the smart home market with the launch of its Cloud Cam and Amazon Key products; however this is not a significant risk for ALRM for a couple of reasons. The first being that AMZN still lacks the operating system capability to connect numerous smart devices on one platform in order to allow users to control all devices within one app. Secondly, ALRM is currently partnered with AMZN, specifically with the Echo and Echo Dot which integrates with ALRM software.
- **M&A Risks.** Currently ALRM is in the process of acquiring two businesses from iControl Networks. If these acquisitions encounter regulatory hurdles or are not successfully integrated into ALRM, it could result in adverse outcomes.

## Management

Stephen Trundle has served as CEO and President of ALRM since May of 2003. Previous to his position at ALRM he served as Chief Technology Officer as well as President of Technology for MicroStrategy Incorporated. Steve Valenzuela joined ALRM in November of 2016 and is currently the Chief Financial Officer. Mr. Valenzuela has served in the role of CFO for five different software enterprises including SugarCRM, Apigee Corporation and Zenprise.



#### Peer Valuation

Name	Ticker	Market Cap (mil)	P/E FY1	EV/Sales ('18E)	EV/EBITDA ('18E)	FCF Yield (actual)
Alarm.com	ALRM	1,800.8	43.52x	5.32x	20.36x	7.78%
Control4	CTRL	697.3	24.21x	2.54x	14.12x	9.08%
Callidus Software	CALD	2,375.1	104.66x	9.26x	46.61x	3.88%
Cornerstone OnDemand	CSOD	2,358.9	96.85x	4.96x	26.37x	2.74%
Ultimate Software	ULTI	6,712.8	62.18x	7.03x	23.90x	6.16%
<b>Peer Averages</b>		<b>3,036.0</b>	<b>71.98x</b>	<b>5.95x</b>	<b>27.75x</b>	<b>5.47%</b>

Source: Factset

#### Peer Fundamentals

Name	Ticker	Revenue	ROIC	ROE	Debt/Equity	Est. 5 YR NI Growth
Alarm.com	ALRM	319.90	11.7%	16.0%	3.5%	115.55%
Control4	CTRL	233.80	9.5%	9.6%	-	-
Callidus Software	CALD	239.70	-	-	-	5.00%
Cornerstone OnDemand	CSOD	459.10	-	-	721.6%	-145.30%
Ultimate Software	ULTI	899.80	6.1%	6.2%	1.8%	189.10%
<b>Peer Averages</b>		<b>458.10</b>	<b>7.80%</b>	<b>7.90%</b>	<b>361.70%</b>	<b>16.27%</b>

Source: Factset

## Evolent Health Inc. (EVH)

February 9, 2018

Matt Tully

Domestic Technology

*Evolent Health Inc. (NYSE: EVH) is an end-to-end healthcare solutions provider for health systems that are moving from fee-for-service reimbursement models to value-based models. About 90% of EVH's revenue is derived from contracts with long-term operating partners, which EVH provides technology infrastructure to health systems in support of population health initiatives. Nearly 10% of EVH's revenue is derived from transformation consulting services, which assists health systems that are developing a population health strategy. EVH's goal is to allow health systems to maximize clinical and financial performance and to help in mitigating financial risk. EVH derives all of its revenue domestically. The firm was founded in 2011 by members of its current management team and administrators of the University of Pittsburgh Medical Center. The company is headquartered in Arlington, Virginia.*

Price (\$):	13.8	Beta:	1.80	FY: Dec	12/31/2016	12/31/2017	12/31/2018	12/31/2019
Price Target (\$):	19.84	M-Term Rev. Gr Rate Est:	38.4%	Revenue (Mil)	256.19	431.62	581.39	697.67
52WK H-L (\$):	10.30-27.50	M-Term EPS Gr Rate Est:	30.0%	% Growth	162.38%	69.80%	34.70%	17.00%
Market Cap (mil):	1,030	Debt/Equity:	11.9	Oper Inc	-76.59	-55.23	-19.74	3.11
Insider Holdings	13.9%	Debt/EBITDA (ttm):	#N/A	% Growth	-80.72%	27.90%	64.25%	115.78%
Avg. Daily Vol (mil):	1.6	WACC	11.01%	Op Margin	-30.13%	-12.79%	-3.40%	0.46%
Yield (%):	0.0	ROA (%):	-6.04	EPS*	(\$1.13)	(\$0.36)	(\$0.34)	0.04
ESG Rating	B	ROE (%):	-8.21	EBITDA	(\$61.68)	(\$29.86)	\$6.26	\$30.32
		ROIC (%):	-7.62	Adj. EBITDA	(\$21.54)	(\$2.30)	\$21.50	\$41.00

Source: FactSet

\*Adj. EBITDA (Non-GAAP)

### Recommendation

Evolent Health has been successful at achieving high revenue growth, while steadily controlling their operating expenses. Revenue has been growing at a 5-year CAGR of 86%, while the negative operating margins have been decreasing over the last three years. EVH is trending closer to profitability with EBIT projected to be positive by 2019. The accelerated momentum away from fee-for-service models in the U.S. has been the result of both private insurers and government payers seeking to shift cost control back to the providers. This shift to a retail-like insurance market benefits EVH. While barriers to entry are relatively low for health systems who seek to set up their own sponsored plans; EVH will succeed because they have the ability to partner and engage health system leaders with end-to-end technology solutions. EVH continues to have a strong pipeline for future sales. Besides adding new partners through the transformation and implementation avenue, EVH is also looking at existing customers to add incremental solutions. During a healthcare conference, management laid out their capital strategy for 2018 and 2019. In terms of M&A strategy, EVH is looking to improve margins through scale and in-sourcing services. They also are seeking acquisitions that can assist them in achieving market leadership in particular regions. For their co-investment strategy, EVH mainly wants to catalyze attractive markets by targeting large opportunities through a combination of capabilities and capital. EVH management stated they will continue to only invest in partners that have high performance and that are highly motivated. With strong growth plans, a trending population health theme, and industry leading technology, EVH is on its way to profitability. After constructing a ten-year DCF model and an EV/Sales multiple valuation, it is recommended that Evolent Health be added to the AIM Equity Fund with a price target of \$19.84, representing a 41.95% upside.

### Investment Thesis

- **Population Health Growth Theme.** Fee-for-service rates are now trending below medical inflation, so health systems are required to assume more risk in order to preserve their existing margins. The fee-for-service system has led to over-utilization and elevated cost growth in the

past. The Institute of Medicine says that 30% of healthcare spending is wasted or misused. EVH can help health systems prevent inefficiencies. Health systems that want to make the transition to value-based payment models lack the scale and expertise to do so, allowing a firm like EVH to assist them. EVH stands to gain a portion of the estimated total addressable market which is between \$20B and \$50B.

- **Strong Business and Growth Model.** EVH supports more than 30 platform partners with 2.7 million lives enrolled on these platforms as of 3Q17. Platform and operations revenue are received on a recurring per member, per month (PMPM) basis. The average PMPM rate as of 3Q17 was \$12.20, but it is understood that some clients pay EVH more depending on risk arrangements. Every year, management seeks to strategically sign 4-6 new partners to long-term contracts per year. The platform partners typically contract anywhere between 5-10 year deals and in 2017, they signed six new long-term contracts. EVH has an estimated growth of 68% for 2017 with 40% being organic. Evolent Health also has a 90% visibility for future earnings.
- **Competitive Advantage.** The technology behind EVH was provided by The University of Pittsburgh Medical Center, the second largest provider health plan in the United States. The Advisory Board Co. is also an early contributor to the company's technology and is one of the healthcare industry's largest research firms. The two companies have provided Evolent Health with expertise that gives them a competitive advantage in the industry.

### Valuation

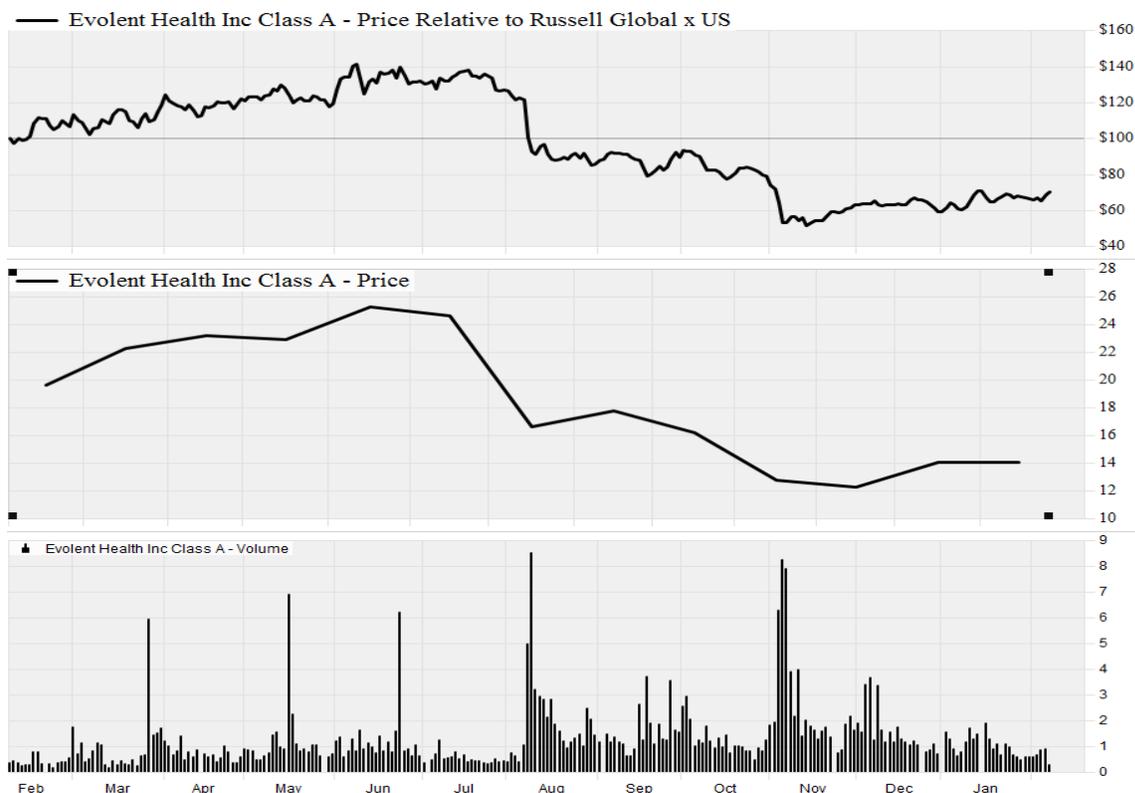
In order to reach an intrinsic value for EVH, a ten year DCF model was constructed. Using a terminal growth rate of 2.50% and a WACC of 11.01%, an intrinsic value of \$18.13 was reached. A sensitivity analysis on the terminal growth rate (2 – 3%) and WACC (10 – 12%) ranged from \$15.55 - \$21.82. Additionally, a EV/Sales multiple valuation was calculated using a 2017E sales of \$431.62 million and a peer average EV/Sales multiple of 3.78x, resulted in an intrinsic value of \$23.84. By weighing the two models 70/30, a price target of \$19.84 was reached, resulting in a 41.95% upside. EVH does not pay a dividend.

### Risks

- **Client Concentration.** In 2016, Evolent's three largest customers comprised of 19.6%, 14.5%, and 12.7% of revenue, or collectively ~47% of total revenue. A loss of one of these top customers would have significant impact on results. This concentration will continue to decline as the customer base increases.
- **Secondary Equity Offerings.** EVH is a growing company that is currently operating at a loss. Their Debt to Equity Ratio is rather low at 11.9% and despite this, EVH has done two secondary equity offerings from 3Q16 to 3Q17. Continually offering more equity is diluting the shares and causing the share price to drop. EVH currently has \$270 million in cash and short-term investments.
- **Government Healthcare Regulation.** The healthcare industry is heavily regulated by federal and state governments. Due to this, Evolent is constantly subject to change and needs to stay on top of these changes because their clients depend on it. It remains to be seen what impact a repeal of the Affordable Care Act will have on the healthcare industry.

### Management

Frank Williams has been the CEO of Evolent Health since August 2011. Prior to beginning his work for EVH, Mr. Williams served as the CEO of The Advisory Board Company from 2001-2008, and as chairman of the board from 2008-2011. He also served as president of MedAmerica OnCall, president of Vivra Orthopedics, and as a consultant for Bain & Co.



### Peer Fundamentals

<u>Name</u>	<u>Ticker</u>	<u>Revenue</u> <u>s</u>	<u>ROE</u>	<u>ROA</u>	<u>Debt/Equi</u> <u>ty</u>	<u>Organic</u> <u>Growth</u> <u>2017</u>
Evolent Health Inc Class A	EVH	1,030	-24%	-14%	12%	44%
Quality Systems, Inc.	QSII	817	6%	3%	5%	1%
athenahealth, Inc.	ATHN	5,323	7%	4%	34%	12%
Allscripts Healthcare Solutions, Inc.	MDRX	2,571	-2%	-1%	108%	3%
Veeva Systems Inc Class A	VEEV	6,666	12%	8%	0%	-
Medidata Solutions, Inc.	MDSO	3,826	8%	4%	66%	-
Peer Averages		3,844	6%	4%	37%	5%

Source: FactSet

### Peer Valuation

<u>Name</u>	<u>Ticker</u>	<u>Market</u> <u>Cap (mil)</u>	<u>P/S</u>	<u>EV/Sales</u> <u>E18</u>	<u>EV/EBIT</u> <u>DA</u>	<u>P/B</u>
Evolent Health Inc Class A	EVH	1,049	2.41	1.66	-	1.03
Quality Systems, Inc.	QSII	823	1.56	1.55	11.66	2.49
athenahealth, Inc.	ATHN	5,704	4.74	3.89	23.83	7.64
Allscripts Healthcare Solutions, Inc.	MDRX	2,622	1.53	2.04	-	2.37
Veeva Systems Inc Class A	VEEV	6,995	14.23	9.58	-	10.36
Medidata Solutions, Inc.	MDSO	3,989	7.82	5.79	-	9.01
Peer Averages		4,036	6	4.6	-	6.4

Source: FactSet

## Taiwan Semiconductor Manufacturing Co., Ltd (ADR) (TSM)

February 9, 2017

Gregory Glaab

International Technology

*Taiwan Semiconductor Manufacturing Co. Ltd. (NYSE: TSM) engages in the manufacturing of integrated circuits and wafer semiconductor devices. Their chips are used in computers, information applications, wired and wireless communication systems, automobiles, industrial equipment and consumer electronics such as smart phones, televisions, cameras, and game consoles. TSM has amassed a world class supply chain by producing made-to-order products, catering to the needs of their over 450 customers including Apple, Intel, Sony, NVIDIA, and AMD. TSM currently owns the highest market share within the global semiconductor industry at 15.26% (Intel is second at 14.76%) and over 50% in the global foundry industry specifically. The company was founded by Chung Mou Chang on February 21, 1987 and is headquartered in Hsinchu, Taiwan.*

Price (\$):	\$ 41.88	Beta:	1.03	FY: Dec	12/31/2016	12/31/2017	12/31/2018	12/31/2019
Price Target (\$):	\$ 55.90	M-Term Rev. Gr Rate Est:	13.8%	Revenue (Mil)	\$ 29,442.06	\$ 32,273.15	\$ 38,106.92	\$ 44,227.28
52WK H-L (\$):	46.57 - 30.17	M-Term EPS Gr Rate Est:	10.9%	% Growth	10.84%	9.47%	18.08%	16.06%
Market Cap (mil):	\$ 229,996.03	Debt/Equity:	18%	Oper Inc	\$ 11,737.66	\$ 13,174.39	\$ 14,812.01	\$ 17,287.05
Insider Holdings	-	Debt/EBITDA (ttm):	41%	% Growth	15.79%	12.00%	12.43%	16.71%
Avg. Daily Vol (mil):	3.7	WACC	10.94%	% Op Margin	40%	41%	39%	39%
Yield (%):	2.03%	ROA:	19%	EPS*	\$ 1.32	\$ 2.26	\$ 2.53	\$ 2.94
ESG Rating	AA	ROE:	26%	P/E (Cal)	14.4	18.2	19.36	16.48
		ROIC:	23%	EV/EBITDA	7.34	8.50	9.50	8.56

### Recommendation

TSM completed their IPO in October 1997 at a price of \$5.49, since then the firm has established themselves as an essential part of the information technology industry. Over the past decade the global semiconductor industry has evolved to become more streamlined and efficient for all parties involved. By establishing their niche as a premier foundry, TSM mainly supplies fabless semiconductor companies with custom wafers and circuits. Because they create the initial components of semiconductors, TSM's products are highly versatile and can be applied to many products and industries. With electronics becoming more widespread and expanding into new industries, demand for semiconductors will continue to increase in the future. TSM saw all-time highs in revenue in Q3 and Q4 of 2017, generating sales of \$8,340 (mil) and \$9,263 (mil). Along with increasing revenue, TSM has also been able to decrease COGS by 9.46% from the year prior. Within the semiconductor industry, TSM is larger compared to other foundries. Historically, TSM has only allocated 8-9% of their revenue to R&D, while their competitors have to allocate greater levels. Over the past 5 years, TSM has seen an average net margin of 35.59%. TSM has also continued to innovate and the company announced two weeks ago that they will be breaking ground on a new facility that will focus on their new wafers, having a capacity of over 1 mil in production per year and generating over 4,000 new jobs in Taiwan. TSM is also at the top 11% of the industry with an ESG rating of AA which is comparable to companies such as Intel, TXN, and NVIDIA. For these reasons, it is recommended that Taiwan Semiconductor Manufacturing Co., Ltd (ADR) be added to the AIM International portfolio with a target price of \$55.90, an upside of 33.46%.

### Investment Thesis

- Increased Reliance on Semiconductors.** As technology continues to advance and become more sophisticated at an increasingly high rate, suppliers are being asked to improve just as quickly. TSM has a proven track record of developing their products along with their clients, improving the end products that they support. Along with the quality of semiconductors, the quantity demanded will likely increase as services and products become more computerized. With already over 450 customers, TSM is one of only a few companies within the semiconductor industry that

will have the capacity to supply this increase in demand as other industries venture into the use of semiconductors.

- **New FAB 18 Facility.** TSM announced recently that they will be breaking ground later this year on their new, \$20 billion FAB 18 facility in Southern Taiwan Science Park. This facility will focus on the production of their new advanced 5 nanometer processes. As of now, it is estimated this facility will have a max capacity of 1 million 12 inch wafers. TSM has made sure to use the full potential of their investments and has held a PPE/Sales ratio of around 1.01 for the past three years. Along with the production of this facility, management has also stated their sustained commitment to green operations and a desire to maintain their high ESG rating of AA by complying and exceeding Taiwanese regulations, specifically related to carbon emissions.
- **Collaboration Within the Industry.** There is currently a mass evolution of the semiconductor industry with firms seeking to streamline the production of semiconductors and reduce costs. As companies are being pressured to improve their operations within the supply chain. TSM has been at the forefront of this movement by becoming the top performing foundry in the world. The firm has continued to streamline their operations by selling off their LED production and discontinuing their solar segments over the past couple years, becoming completely committed to the production of wafers and circuits. This has led to increased collaboration and innovation within the industry. TSM works closely with their biggest competitor, Samsung, in the production of the A9 chip in Apple's iPhone 7. This universal mindset of collaboration will be key in the coming years for continued innovation and improvement of the industry.

### Valuation

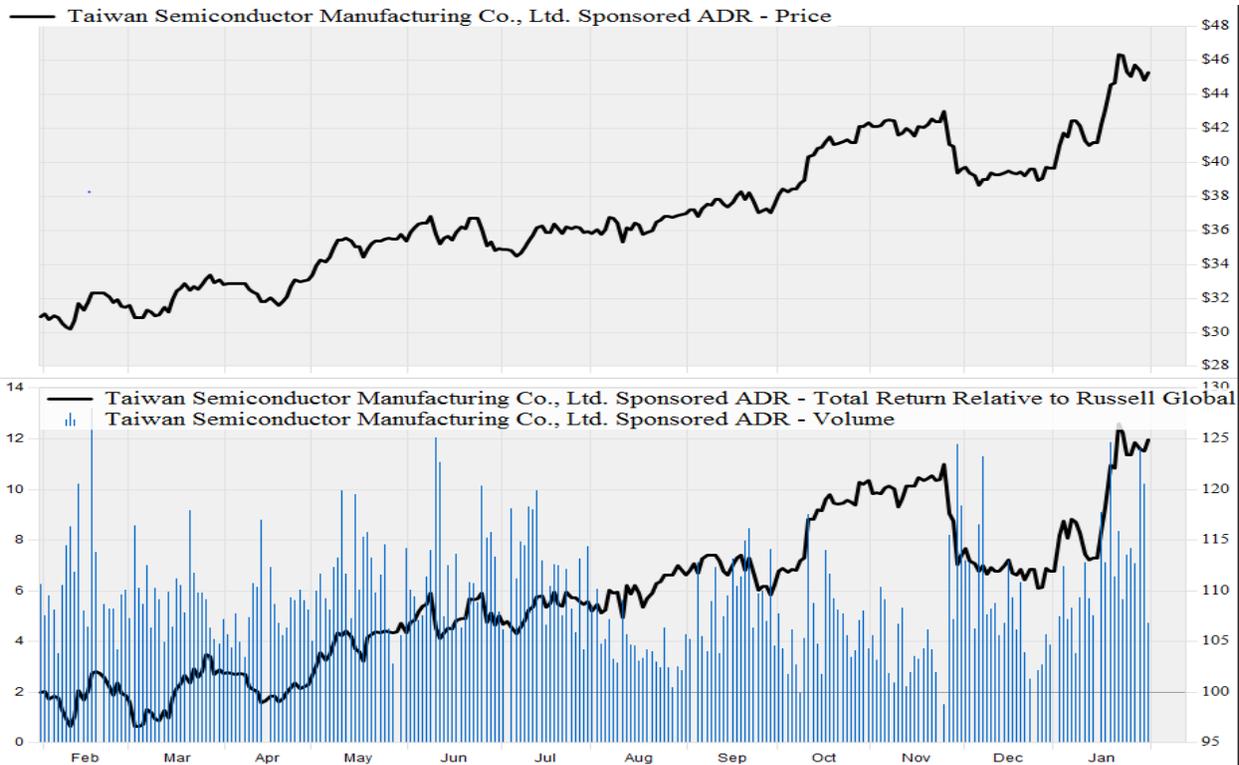
To reach an intrinsic value for TSM, a 10 year DCF model was constructed and a WACC of 10.94% was used. Using a terminal growth rate of 2.5%, an intrinsic value of \$54.74 was achieved. Additionally a P/E multiple valuation was employed. Using a FY1 EPS of \$2.53 and an industry 5 year average multiple of 22.19x, an intrinsic value of \$56.13 was reached. Additionally, an EV/EBITDA multiple valuation was calculated. Using a FY1 EBITDA of \$26,457,358,795 and an industry 5 year average multiple of 11.14x; dividing by the current diluted shares outstanding, an intrinsic value of \$56.81 was reached. After weighting each value evenly at 33.33%, an overall intrinsic value of \$55.90 was achieved, representing an upside of 33.46%. TSM also pays, on average, a dividend yield of 2.3%.

### Risks

- **Highly Cyclical Industry.** The semiconductor industry is based on consumer demand of IT products. TSM's products can be found incorporated into almost every consumer IT product on the market. Majority of these end products are expensive luxury goods that can fluctuate with the economy as a whole. If a recession occurs in the near future, this could lead to their clients wanting to restructure their current contracts and affect overall sales.
- **How Much Can Semiconductors Improve?** With technology continuing to improve and companies asking TSM to increase their wafer and circuit capabilities, while maintaining certain requirements, mainly size, there comes a point where something will have to give. Experts are unsure as to when this will occur however, TSM has not shown any signs of slowing down, or having to increase R&D to develop new capabilities to maintain with the rest of the IT industry.

### Management

Chang Chung-Mou "Morris" founded the company in 1987 and has been CEO and Chairman since. After a historic career, he is now looking to retire by the end of the second quarter of this year. It is said that Mark Liu will succeed Chang as chairman and will have the final say in major decisions while C.C. Wei will become CEO and orchestrate operations handed down by the board.



**Peer Valuation (Non Bank)**

<u>Name</u>	<u>Ticker</u>	<u>Market Cap (mil)</u>	<u>P/S</u>	<u>5 Yr Avg P/E</u>	<u>5 Yr Avg EV/EBITDA</u>	<u>P/B</u>
Taiwan Semiconductor Manufacturing Co.,	TSM	229,996	7.30	14.48	7.19	4.99
Intel Corporation	INTC	233,906	3.85	17.02	6.46	3.30
NXP Semiconductors NV	NXPI	40,870	4.32	26.57	15.39	2.70
NVIDIA Corporation	NVDA	149,591	17.27	24.78	11.53	23.54
Microsoft Corporation	MSFT	724,554	7.84	21.78	10.36	8.09
Analog Devices, Inc.	ADI	34,571	6.44	28.53	15.89	3.40
Peer Averages		287,230	7.94	23.7	11.93	4.4

Source: Bloomberg

**Peer Fundamentals (Non Bank)**

<u>Name</u>	<u>Ticker</u>	<u>Market Value (Mil)</u>	<u>ROE</u>	<u>ROA</u>	<u>Debt/Equity</u>	<u>Est 5 yr NI growth</u>
Taiwan Semiconductor Manufacturing Co.,	TSM	229,996	25.86	19.05	17.96	15.94
Intel Corporation	INTC	233,906	14.02	8.12	38.37	13.94
NXP Semiconductors NV	NXPI	40,870	25.86	19.05	17.94	33.56
NVIDIA Corporation	NVDA	149,591	32.57	19.36	48.94	41.32
Microsoft Corporation	MSFT	724,554	29.37	9.759	122.53	4.04
Analog Devices, Inc.	ADI	34,571	9.46	4.98	77.26	21.18
Peer Averages		236,698	22.26	12.25	61.01	22.8

Source: Bloomberg