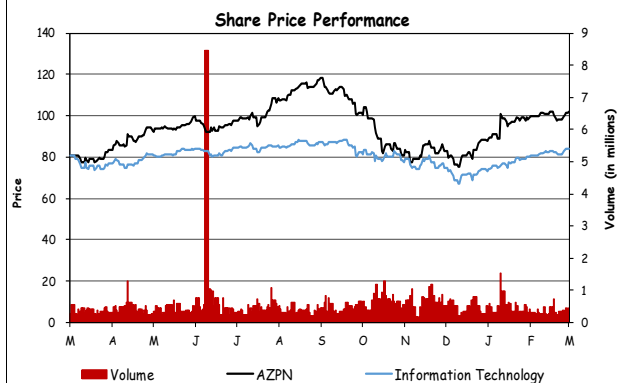


Aspen Technology, Inc.	Symbol: AZPN
Analyst	John Cote
Buy below	\$77.39
Sell above	\$101.41
Probability of Price Increase	47%
Last Price	\$102.22
Intrinsic Value	\$84.51
Target Dividends	\$0.00
Target Price	\$92.87

**Description**

Aspen Technology, Inc., together with its subsidiaries, operates as an asset optimization software company in the United States, Europe, and internationally.

Sector	Information Technology
Industry	Software
Last Guidance	December 11, 2018
Next earnings date	NM

**People**

Pietri, Antonio, President, CEO & Director  
 Johnsen, Karl, Senior VP & CFO  
 Hammond, Frederic, Senior VP, General Counsel & Secretary  
 Weiss, Gary, Chief Operating Officer  
 Chan, Willie, Chief Technology Officer  
 Scudder, Bill, Senior VP & Chief Information Officer

**Top Competitors**

ANSYS, Inc.	RealPage, Inc.
Manhattan Associates, Inc.	Exprivia S.p.A.
Synopsys, Inc.	Glodon Company Limited
Systema Corporation	Ebix, Inc.
Q2 Holdings, Inc.	Guidewire Software, Inc.

**Market Statistics**

Market Capitalization (mil)	\$7,119.20
Last Price per share	\$102.22
52 week high	\$118.86
52-week low	\$74.84
Volatility	26.86%
Daily volume (mil)	0.44
Short interest	2.10%
Days to cover short interest	3.18
Beta	1.94

**Investment Thesis****UNIQUE LONG-TERM GROWTH PROSPECTS AND MARGIN EXPANSION**

I am initiating coverage of Aspen Technology with a SHORT at \$101 due to a \$92 target price. I believe that Aspen Technology is over-valued and will fail to meet company estimates. Aspen Technology is part of the global market and research found that due to Brexit, interest rates will rise which will likely slow the software industry growth in 2019. I also find it noteworthy that the CEO himself is not investing in the growth of the company.

**For the short:****1. CEO sells 7.1k shares:**

Pietri Antonio sold 7.1k shares of Aspen Technology totaling \$705,861. I believe that if the CEO does not believe in the company succeeding, then we should not either.

**2. Short Interest:**

The price is moving with low volume because of the short so it is a fake increase in share price. The average daily volume is decreasing however, the short interest has been increasing and is currently at about 1.5M.

**3. Decreasing CAPEX/EBITDA:**

Aspen has been decreasing their CAPEX from 8 million back in 2015 to only .5 million LTM. In addition they have a decreasing adjusted EBITDA.

**For the long:****1. Stock Repurchase Program:**

Aspen technology anticipates repurchasing \$75 million of stock in both third and fourth quarters of 2019.

**2. Technology Innovation:**

Robotics, artificial intelligence and machine learning are the technology trends for 2015-2065. Aspen is focusing on asset optimization which they believe is the next major driver of productivity growth.

**Key Catalysts for price change**

- Brexit (rising interest rates will likely slow software industry growth in 2019).
- Acquisitions (Rt-Tech, Apex Optimization, CCT)

**Valuation**

My \$92 price target is derived from Discounted Unlevered Free Cash Flow estimates

Ownership		Change in Ownership ("Input"month)
Shares outstanding (mil)	69.65	
Diluted shares outstanding (mil)	72.09	
Options and Warrants (Shares equivalent)	0.88	
% shares held by institutions	94%	"INPUT from BB"
% shares held by investments Managers	80%	"INPUT from BB"
% shares held by hedge funds	13.91%	"INPUT from BB"
% shares held by VC/PE firms	0.011%	"INPUT from BB"
% shares held by insiders	0.32%	-3.77%
Poison Pill Type	FALSE	

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## Quarterly Earning Surprises (Actual Vs. Median Estimates)

Revenue	
12/31/2017	-13.33%
3/31/2018	3.17%
6/30/2018	0.68%
9/30/2018	1.80%
12/31/2018	17.02%
Mean (Standard Error)	1.87% (1.02%)

EBITDA	
12/31/2017	-19.04%
3/31/2018	-15.44%
6/30/2018	-24.18%
9/30/2018	-93.04%
12/31/2018	24.21%
Mean (Standard Error)	1.87% (14.45%)

## Valuation

## DCF Valuation

	Revenues	EBITDA Margin	UFCF	WACC	ROIC	Price Per Share
Base Year (Actual)	\$522.09	30%	\$180.47	9.11%	10.36%	\$92.64
year 1	\$585.26	51%	\$272.48	8.98%	17.54%	\$100.64
year 2	\$655.49	50%	\$294.37	8.98%	17.03%	\$109.07
year 3	\$748.02	52%	\$334.85	8.98%	17.49%	\$117.94
year 4	\$854.23	52%	\$371.20	8.98%	17.20%	\$127.23
year 5	\$971.26	52%	\$412.06	8.98%	16.80%	\$136.93
year 6	\$1,099.47	52%	\$457.08	8.98%	16.33%	\$147.03
year 7	\$1,240.20	52%	\$506.62	8.98%	15.82%	\$157.51
year 8	\$1,389.03	51%	\$559.71	8.98%	15.24%	\$168.33
year 9	\$1,539.31	51%	\$614.07	8.99%	14.58%	\$179.48
year 10	\$1,687.68	51%	\$667.89	8.99%	13.85%	\$190.90
year 11	\$1,830.42	51%	\$719.78	8.99%	13.08%	\$202.58
year 12	\$1,963.62	51%	\$768.24	9.00%	12.29%	\$214.48
year 13	\$2,083.32	51%	\$811.74	9.01%	11.49%	\$226.55
year 14	\$2,185.73	50%	\$848.83	9.01%	10.70%	\$238.78
year 15	\$2,267.36	50%	\$875.25	9.02%	9.89%	\$260.87
Continuing Period	\$2,325.27	50%	\$695.28	9.03%	9.03%	

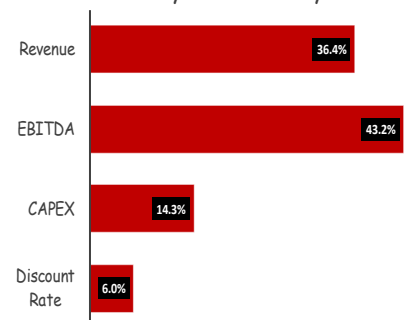
Relative Valuation				Asset Based Valuation	
Multiple	EV/Rev (FW)	EV/EBITDA (FW)	P/BV (TTM)	P/E (FW)	Recovery Rate
Median (Peers)	6.2x	22.2x	5.7x	30.3x	100%
Base	Revenue (NTM)	EBITDA (NTM)	Book Value (LTM)	Net Income (NTM)	Capital
AZPN	\$599.49	\$303.02	\$1,066.78	\$223.93	Intangibles
Implied EV	\$3,740.00	\$6,714.65			Claims
Total Net Claims	-\$5.36	-\$5.36			
Implied EQ	\$3,745.37	\$6,720.01	\$6,074.00	\$6,795.11	

## Valuation Summary

Model	Intrinsic Value	Target Price	Weight
DCF Valuation	\$92.64	\$100.64	0.00%
EV/Rev (FW)	\$51.32	\$55.93	0.00%
EV/EBITDA (FW)	\$92.09	\$100.36	0.00%
P/BV (TTM)	\$83.23	\$90.71	0.00%
P/E (FW)	\$93.12	\$101.48	100.00%
Asset Based Valuation	\$85.25	\$92.90	0.00%
Price per Share	\$93.12	\$101.48	100%

Financials			
Profitability	AZPN (LTM)	AZPN Historical	Peers' Median (LTM)
Return on Capital	10.4%	99.39%	14.67%
Adjusted EBITDA Margin	29.9%	33.85%	28.68%
Return on Equity	9.1%	21.6%	13.1%
Adjusted Net margin	18.5%	32.5%	11.1%
Invested Funds	AZPN (LTM)	AZPN Historical	Peers' Median (LTM)
Cash/Capital	223.5%	68.3%	27.0%
NWC/Capital	-736.1%	-93.4%	-4.5%
Operating Assets/Capital	452.9%	125.1%	39.0%
Goodwill/Capital	159.6%	6.7%	34.7%
Capital Structure	AZPN (LTM)	AZPN Historical	Peers' Median (LTM)
Total Debt/Market Cap.	0.04	0.02	0.06
Reported Cost of Borrowing	3.9%		4.2%
Cash Interest/Total Debt	3.0%		3.1%
CGFS Credit Rating	AA		BB
Credit Model Rating			b+ to bb-
Probability of Default	0.06%		0.03%
Cost of Capital			
	CGFS Credit Rating	Credit Model Rating	Probability of Default
Implied Cost of Borrowing (AZPN)	4.0%		4.2%
Implied Cost of Borrowing (Peers)	5.5%	7.0%	4.9%
Cost of New Debt Estimate	3.8%		
Market Risk Premium Estimate	5.5%		
Cost of Equity Estimate	9.3%		
WACC Estimate	9.0%		

## Sensitivity Attribution Analysis



## Intrinsic Value Distribution--Probability (Upside)=47%

