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Application Software Industry, Information Technology Sector
New York Stock Exchange (NYSE)

ALTERYX, INC.

Date: 2020-02-04	Beta (3Y Weekly): 1.51	Recommendation: **HOLD**
Ticker: AYX	Market Capitalization: $9.431 B	Target-Price: **$149.67**
52-Wk Range: 64.52/147.79	Closing Price: $144.92	Upside Potential: **4.14%**

EXECUTIVE SUMMARY

Alteryx, Inc. (AYX) is an application software company that provides subscription and post contract services (PCS) to its customers through its product offerings. The company only operates within the information and technology sector.

Investment Recommendation

We issue a HOLD recommendation on AYX with a 12-month target price of $149.67. This implies a projected return of around 4% from its February 4th closing price of $144.92. Our target price for AYX was calculated by taking a weighted-average of our Discounted Cash Flow (DCF) model and Market Multiples (MM) valuation. We then valued the potential of AYX being acquired by another firm over the next 12 months at $2.11 through a Binomial Option Pricing (BOP) model, which we believe is not reflected in our previous valuation models. Once we account for the BOP model, and qualitative factors are taken into consideration, we issue a HOLD recommendation. Our recommendation is driven by several factors presented below:

Ticker	AYX	1496252D	Total
Country	US	US	NA
Class	Class A	Class B	NA
Par Value	0.0001	0.0001	NA
Shares Outstanding	51,819,830	13,256,299	65,076,129
Price	$144.92	Unlisted	NA
Voting Rights	1	10	NA
Market Cap	$7,440,291,191	$1,903,339,400	$9,343,630,591
Dividend Policy	No Dividends	No Dividends	NA

Figure 1.1 - Security Details
Source: Bloomberg

Investment Thesis and Report Outline

- **Industry Outlook** looks positive for AYX, with an expected revenue growth of around 18% for the application software sub-industry. AYX is a young company that will need to prove itself as a major player in its industry. AYX aims to target a niche market of "Data Citizens," data users who have some experience with data analytic programs like Microsoft Excel and Python. AYX claims their "sticky" products will spread through organizations and business partners using a "Land and Expand'' business model. However, a big challenge for AYX will be recruiting and retaining talent, as is common for technology and software companies. Overall, the high-growth software industry stands to put AYX in a strong position for growth. A Porter's Five Forces diagram and further analysis concerning AYX's growth potential referenced in appendix 7.
- **Competitive Positioning** through a unique, platform-based software will drive AYX's growth in the application software industry. However, AYX is still a relatively new company that faces large competition and additional growth-related international hurdles, despite its potential for being acquired. AYX bases a large portion of its international growth through its "Land and Expand" business model. Since AYX has substantial exposure to many international markets such as the Asia-Pacific and, European regions, we analyzed the global economy, referenced in Appendix 6.c.
- **Large Technology Partners** drive innovation and maintain AYX's ability to implement its "Land and Expand" model throughout different organizations and within businesses. AYX is involved in strategic partnerships with international value-added resellers and management consulting firms, including PricewaterhouseCoopers (PwC), a potential key channel for global growth. Strategic partnerships will help AYX boost growth both domestically and internationally.
- **Weighted-Valuation Methodology -** A DCF model and MM valuation were used to value free cash flows and growth potential. In addition, a BOP model was utilized to assess the value of the upside probability of AYX being acquired by one of its larger technology partners or competitors within the next 12 months.
- **Investment Risks** which include strategic, company specific, market, and financial risks that can adversely affect AYX's ability to execute its business model.

			Valuation
Model	Weight	Valuation	Contribution
DCF	60.00%	$145.96	$87.58
Multiples (PEG)	40.00%	$149.97	$59.99
		1-Year Price Target	*$147.56*
		BOP Value*	*$2.11*
		1-Year Price Target w/ BOP Added Value	*$149.67*

Figure 1.2 - Valuations by Methodology and Scenario

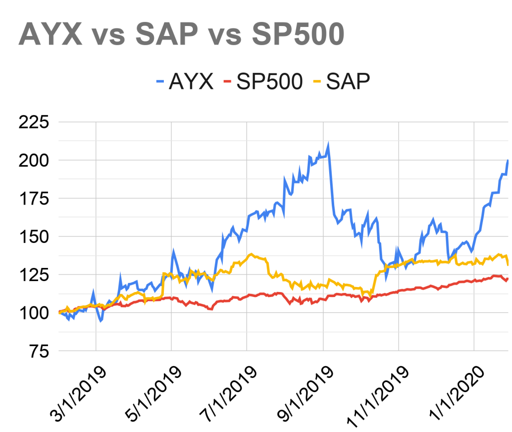


Figure 1.3 - AYX vs. SAP vs. S&P500

COMPANY OVERVIEW

Business Summary

AYX is a data analytics software firm geared towards removing the barriers to complex data analysis. The firm was founded in Irvine, CA in 1997, and currently employs 1,200 employees and serves 5,600 customers. AYX released its initial public offering of nine million shares in 2017, raising approximately $125M. As of date, the company serves 34% of the Global 2000 (a ranking of the world's top 2,000 public companies) with clients such as Microsoft, NETFLIX, AUDI, IBM, and Amazon. AYX's "Land and Expand" business model seeks to simplify companies' and individuals' collection and interpretation of data through the distribution of its subscription-based products (Designer, Server, Connect, and Promote). AYX looks to ease the process of data collection and interpretation so that the general office worker can conduct his/her own analysis with the side goal of removing the need for advanced office IT personnel.

Industry - A Growing Company set in a Growing Industry

AYX operates in the application software sub-industry of the information technology sector. The application software sub-industry has a market capitalization of $1.75 trillion and a Forward P/E multiple of 170.88x, which is significantly higher than the overall market. The industry is currently in the growth stage of its life-cycle. According to Bloomberg, revenue within the sub-industry is expected to grow over the next year at a rate of 18.34%, thus the industry environment will continue to provide growth opportunities. We identified AYX's peer group as Anaplan Inc., Dynatrace Inc., PROS Holdings Inc., Smartsheet Inc., Hubspot Inc., MongoDB Inc., Proofpoint Inc., RealPage Inc., Elastic NV, Avalara Inc., SolarWinds Corp., Domo Inc., and Coupa Software Inc. derived using a regression-based methodology detailed in Appendix 8.

Market Share ($billion USD)		
Coupa Software Inc.	10.121	0.58%
MongoDB Inc.	9.261	0.53%
Dynatrace Inc.	8.963	0.51%
Anaplan Inc.	7.94	0.45%
Hubspot Inc.	7.587	0.43%
Proofpoint Inc.	7.242	0.41%
Avalara Inc.	6.809	0.39%
SolarWinds Corp	6.034	0.34%

Figure 2.1 - Market Share in Competitive Landscape
Source: Bloomberg

AYX established its niche in the application software industry to cater to the needs of citizen data scientists and data analysts conducting descriptive and diagnostic analyses. Figure 2.2 illustrates the niche market that AYX seeks to address. The company claims that this "unaddressed and underserved" segment provides a growth opportunity for its differentiating products. AYX asserts that its products are well suited to address a "conjunction of the trained statistician and citizen data scientists" in the industry through its offerings of both "code-free" and "code friendly" products.

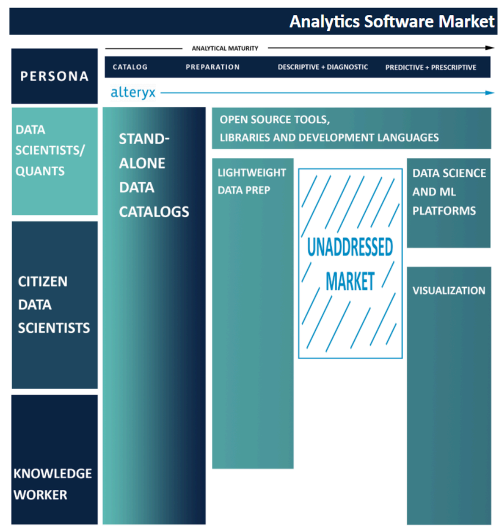


Figure 2.2 - Unaddressed Market
Source: Alteryx Inc., Investment Presentation

Product Description - Niche Products for a Niche Market

AYX claims its products are unique in their abilities to automate and speed data analysis activities while remaining user-friendly to both code-knowledgeable and code-inexperienced individuals.

Alteryx Designer - An analytics software tool used for profiling, preparing, and blending data. This product is used to create visual workflows and processes through an easy-to-use drag-and-drop interface. Designer also includes additional products such as Location and Business Insights datasets. AYX uses this project as a way to "land" customers and introduce them to its platform and other product offerings. This product is the main driver for subscription numbers.

Alteryx Server - A secure and scalable server-based product for sharing, running and scheduling analytical processes and applications within a web-based interface. This product contributes to margins. Alteryx Server enhances AYX's value proposition and is continually being developed to provide new technologies such as in-memory engines for faster processing power.

Alteryx Connect - A collaborative data exploration platform for discovering information assets and sharing recommendations across the enterprise. This product is an extension of the platform and enables interconnectivity among its customer's organization.

Alteryx Promote - An advanced analytics model-management product for a company's data scientists and analytics teams to build, deploy, and monitor predictive and prescriptive models in real-time. This product aims to tie the platform together and add value by acting as an end-to-end model production system.

Customers - Valuable Clients & Partners Drive Reliable Growth

AYX's customer base includes a third of the Global 2000 (an annual ranking of the top 2,000 public companies). AYX customers represent many industries including retail, food services, travel, technology, healthcare, media, energy, and utilities. The company's focus has recently shifted to "high-quality lands." It claims that through its "Land and Expand" business model, its "sticky" products will continue to drive both sales and growth through gradual adoption of its products within organizations and first time customers.

COMPETITIVE POSITIONING

Company Strategies - 'Altery'ing its Competitive Position

"Land and Expand" Model

- AYX's primary method of landing new customers is through free trial offerings of Alteryx Designer to industry people and data science students.
- AYX claims growth is driven by "word-of-mouth marketing, collaboration, and standardization of business processes." Dollar-based net-expansion (DBNE) rate over 100% in the last four quarters is indicative of the success of its "Land and Expand" model for growth. However, this expansion rate has been slowing over the last few quarters in fiscal year 2018 (figure 3.1b).

International Expansion

- International revenues increased 48% year-over-year (Q4 2017 to Q4 2018), largely driven by a global demand in data analytics.
- The 48% accounted for $28.7 million and 335 net new customers.
- AYX's international exposure reaches over 80 countries. Strong growth in international revenues from 2015 to 2018 of 14.5x has been key in increasing its market penetration abroad.

Channel and Partner Ecosystem

- AYX is able to leverage three types of partnerships to drive growth: resellers, strategic tech alliances, and global analytic consulting firms.
- Resellers account for 20% of total revenue. The largest area of influence is its consulting partners that are in direct contact with the C-suite.
- Tableau, another US-based data platform, continues to be a strong partner regardless of its acquisition by Salesforce. The synergy between Tableau and AYX continues to provide AYX a tailwind for growth.
- Tableau Prep, a competing product by Tableau, is still not line-of-business friendly. The cross-platform compatibility between it and AYX products allows Salesforce users to seamlessly create novel insights with both Alteryx Designer and Tableau Dashboards.

Community Expansion and Extension

- AYX's business model will contribute to a significant expansion in 2020 through a trend of chief data officers taking bigger leaps in adopting its platform in the emerging strategy for digital transformation.
- C-level executives are pushing for their staffed statisticians and the average citizen data-scientist to adopt the software.

Continued Technology and Business Innovation

- AYX is actively developing the next steps for its platform to build an ecosystem beyond a point solution. This will release vertical solutions with more discrete functionalities and allow for continued product expansion.

Competitive Sustainability - Continuing Growth through Customers & Culture

AYX's exposure to 34% of the Global 2000 has not peaked its expansion period. There remains room for growth among its existing customers. Although AYX sees a high frequency of competing entrants, it has positioned itself for long-term durability. AYX built a wide, competitor-resistant moat based on customer reliance/loyalty, product superiority (for the niche market), and a positive corporate culture.

Marketing Analysis - A Niche Strategy for a Niche Product

"Land and Expand"ing on Future Potential

A substantial part of AYX's "Land and Expand" business model is based on attracting and retaining new customers. As a result, AYX utilizes volume-demand generation and account-based marketing to generate leads for its salesforce. It also dedicates resources towards websites, social media, paid search, and email advertisements, along with webinars, channel partner events, and field events with data analytic leaders and scientists. Among these is AYX's attendance of the annual Inspire conference where the company showcases its products.

Figure 3.1 - Diverse Customer Base

Source: Alteryx, Inc. Website

	Customers			
	Mar-31	Jun-30	Sep-30	Dec-31
2017	2565	2823	3054	3392
2018	3673	3940	4315	4696

Figure 3.1a - Customer QoQ

Source: Alteryx, Inc. 2018 10-K

**Organizations entering free trials are not considered*

	Dollar-Based Net Expansion Rate			
	Mar-31	Jun-30	Sep-30	Dec-31
2017	134%	133%	131%	130%
2018	129%	129%	131%	132%

Figure 3.1b - DBNE QoQ

Source: Alteryx, Inc. 2018 10-K

**Excludes contract value relating to pro services*

Niche Marketing for a Niche Product

The "Land and Expand" strategy is effective, as it describes a niche marketing approach. The data analysis process that AYX products conduct is not unique in function. However, it is novel in its ease-of-use and superior user-interface. AYX capitalizes on this by highlighting its products' code-free and code-friendly interface, which appeal to its target market (businesses and office workers that desire a data processing and report-producing analytics software that is user-friendly and is more advanced than excel but not as sophisticated as code-dependant products such as R and Python). Nevertheless, AYX markets itself as producing a novel product that addresses a niche market. AYX currently faces no substitutes that claim a similar functionality or practicality in its niche market.

Value from Value-Added Resellers

One of the most effective means of expansion stands to be through value-added resellers (VARs) and partners. This manifests primarily through over 200 management consultants and system integrator organizations that implement Alteryx products into its clients' companies, thus providing AYX with easily obtained vertical integration.

Customer Revenues Dec 2019

Company Name	Company Revenue (thousand USD)
Ford Motor Co	$160,338.00
Microsoft Corp	$125,843.00
Kaiser	$83,149.84
Nike Inc	$39,117.00
Southwest Airlines Co	$22,428.00
Mcdonald's Corp	$21,076.50
Pricewaterhousecoopers LLP	$5,733.37
Belk Inc	$4,109.56
Tableau Software Inc	$1,155.35
Knight Transportation Inc	$1,118.03
Pluralsight Inc	$232.03
Ansira Partners Inc	$91.27
Kaiser Permanente	$6.46

Figure 3.2 - Selected Customer Revenues

Source: Thomsons Reuters - Eikon Database

Talent Acquisition - Directors & Developers will Drive Future Success

AYX continues to invest in hiring top technical talent that will drive its core technology innovation. This innovation occurs through developments in its cloud products, improving data governance on its server products, and updating its in-memory engine as the demand for such capabilities rises.

Alteryx as an Acquisition Target - Acquiring Another Source of Value

AYX has the potential of becoming an acquisition target to many large firms looking to enter the rapidly-growing data analytics industry. With news of Microsoft's multi-billion dollar government contract and a growing trend of companies undergoing digital transformations, AYX is a top contender in the field of data analytics. Moreover, the mergers and acquisitions (M&As) activity within the US has been increasing due to favorable business conditions. M&As within the software industry has increased over the last few years.

On February 3rd, 2020, AYX announced a "Global Strategic Partnership '' with PwC during after-hours of trading at its "AlterUs" conference in Las Vegas, Nevada. The following day, AYX experienced a 5% stock price gain at the open and closed 7.14% above the previous closing price, whereas the application software sub-industry was down 1% from the previous trading day as shown in Figure 3.3. This strategic move from both parties falls in line with their business strategies. AYX's strong data science, automation, and analytics platform compliments PwC's market reach and dominant consulting and digital experience.

AYX automation products are already being used within PwC's tax consulting segment, according to a PwC Tax Associate from the firm's Arizona office. The AYX platform allows PwC's employees to "automate repetitive tasks and eliminate [billable] hours". PwC employees follow a PM5 initiative with the goal of eliminating five million hours from their projects by the early 2020s in order to free up time to look at other client matters. Within other segments of PwC, the auditing and assurance segments already have an in-house platform that compliments the AYX's product line.

Additional reasons for a potential acquisition of AYX include its high growth and recent positive cash flow. A substantial portion of the firm's costs are primarily selling, general, and administrative (SG&A) expenses, as displayed in the EBITDA waterfall in Appendix 11. This presents an enticing opportunity for a larger firm to acquire AYX and cut a large portion of SG&A expenses to reap the rewards of increased efficiency.

Price Movement on Announcement

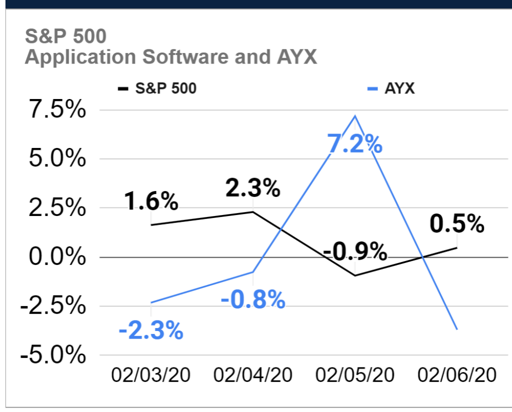


Figure 3.3 - Reaction to AYX and PwC Strategic Partnership

Source: Yahoo! Finance, Bloomberg

Corporate Governance & Social Responsibility - Practiced, but not Stressed

It is our opinion that positive corporate governance and corporate social responsibility practices and structures positively contribute to the sustainability and longevity of a firm. As such, should AYX act favorably in regards to these concepts, it should positively impact our team's valuation of the firm.

We find the creation of a quantitative-rating scale to be arbitrary, as it would only be compared against itself and not other companies or comparables. As such, we will choose to either accept or deny the Institutional Shareholder Service (ISS) scores based on the information listed in this section and below.

AYX, like many of its competitors stresses proper corporate governance to a relatively moderate degree. Its board is comprised of 87.5% independent directors and is composed of three main functioning committees (Audit, Composition, and Nominating/Corporate-Governance), with separate and distinct roles for the Chairman of the Board of Directors (BoD) and the Lead Independent Director. For an analysis of the BoD and executive managers please refer to both Appendices 9 and 10. AYX's managers, which are experienced in the data management field, are often sourced from competitors and should be able to leverage their experience to help the company capitalize on its growth potential. Nominations and elections for the BoD are staggered on a three-year basis with rotating annual elections for each committee. AYX has further adopted and published its own code of business conduct and ethics. Although a majority of voting rights exist in unlisted Class B shares, insiders only hold 1.65% of the total class A and B shares outstanding (see Appendix 12).

<u>Corporate Social Responsibility</u>

Although corporate social responsibility is not the main focus for AYX, it is still enforced. According to the Alteryx Community Blog, the firm hosts annual Volunteer Weeks where the company conducts food donations, analytical volunteering, Thank-A-Thons, and other related events (including gardening and tree-planting activities that demonstrate Corporate Environmental Responsibility).

The ISS has scored the firm with a 5/10 for Audit, 8/10 for their BoD, 10/10 for Shareholder Rights, and 7/10 for Compensation. Based on AYX's shareholder structure as outlined in Figure 1.1 and Appendix 12 and its positive treatment of employees (especially through benefits, see Appendix 13), in addition to the previous reasons given,we choose to accept the ISS scores for corporate governance.

Board of Directors
<u>Quick Facts</u>
• 87.5% Independant Directors
• 75% Director Meeting Attendance
• Board Age Range = 19 years
• Avg Board Tenure = 2-3 years
• Avg Director Age = 60
• 25% Board = Female
• Board Size = 8

Figure 3.4 - Board of Directors
Source: Alteryx, Inc. Website

Revenue Growth - A Path Defined by a Product

AYX has achieved significant revenue growth of 93% in 2018 with overall revenue of $253M (see Appendix 2.a). This trend continued into much of 2019, where AYX's top line performance has been bolstered by improving international sales in 2019 (which have experienced a year-over-year increase of over 150%). These foreign sales have outpaced domestic growth and currently represent approximately 30% of AYX's overall revenue. The strong performance in revenue growth both domestically and internationally leads us to be confident in management's ability to realize their stated strategy of international expansion and internal "Land and Expand"-ing of pre-existing customers. However, this strong revenue growth is almost entirely generated from sales of AYX's Designer software. Going forward, we are not confident on the ability of other product offerings to showcase differential benefit to competitor's software or have a material impact on AYX's revenue.

VALUATION ANALYSIS

Valuation Weightings

We arrived at a target price of $149.67 by weighing our DCF model at 60% and MM model at 40%. This reflects our preference towards a model that takes into account more company-specific factors, along with our own analytical assumptions of how AYX is likely to operate over the coming years. Additionally, we believe a 3-stage FCFF model allowed us to illustrate subtle cyclicalities in revenues resulting from 12 and 36 month subscriptions, and more accurately represent AYX's growth into perpetuity. It should also be noted that we employed a Binomial Option Pricing (BOP) model to determine the value of AYX potentially being acquired. This provided an additional perspective and added to our weighted average of the DCF and MM derived target price. Finally, we utilized a Monte Carlo Simulation to check our updated target price and recommendation.

	DCF Model
Base Valuation	$145.96
	Scenario Analysis
Grey Skey	$89.12
Blue Sky	$188.34

Figure 4.1 - DCF Valuation, Scenario Analysis

Three-Stage FCFF DCF Model Assumptions

We used a three-stage free cash flow to the firm model in order to best reflect AYX's growth in three phases (Appendix 2). The first stage is a high-growth period using specific growth forecasts of domestic and international revenues up to FY 2023 (Appendix 2.a.). In this, we incorporate a slight cyclicality of revenues due to varying subscription lengths, more as an illustrative point. The second stage reflects a linear moderation of growth from 25% to 17.5% in years 2024-2027 and the third stage uses a growth in perpetuity of 4%. Key model assumptions follow the same stage structure detailed in Appendix 2.c. Other model-related calculations are also presented in Appendix 3.

AYX's revenue grew by 92.7% in 2018. We expect continued high growth in the first stage of our model. We see revenues growing rapidly in 2019 as evident by its 59.4% growth rate then drop back down in 2020. Revenues are then expected to pick up in 2021 due to a strategic partnership with PwC and cyclical revenue effects. International revenue growth is expected to continue outpacing domestic revenue growth, due to AYX's push to expand overseas and capitalizing on its relationship with PwC to achieve greater market reach into Europe. After 2023, we model AYX's revenue growth rate to moderate linearly. This serves to conservatively reflect growth as it matures to perpetuity. A terminal growth rate of 4% is reasonable as we expect the technology sector to grow at a faster rate than U.S. GDP, coupled with the expectation of the technology sector maintaining higher margins compared to other sectors.

As AYX continues to grow through the next few phases, we expect it to become increasingly efficient in terms of its pre-tax operating margin. We modeled this increasing efficiency through our EBIT margin, scaling to target margins at the end of the high-growth stage and into the perpetuity stage, at 23% and 29%, respectively. Our listed COGS includes OPEX and is modeled as (1 - EBIT margin). We believe that ultimately a 29% pre-tax EBIT margin estimate is reasonable, given its current growth trend and following similar companies at more mature stages.

In order to account for a more realistic effective tax rate going forward in our model, we used Aswath Damodaran's calculated average effective tax rate of 12.27% for the computer software industry as of January 2020. His estimate of 12.27% seemed reasonable based on comparable companies. AYX received a tax benefit from losses in 2018, so in order to avoid such a sudden disparity in tax obligation, we implement the assumed effective tax rate of 12.27% at its perpetuity stage and scaled up to it linearly over the next 9 years. We believe this allows a more reasonable growth in taxes and earnings and provides a smoother output from our model.

We kept capital expenditures (CAPEX) constant at 2.5% of revenues into perpetuity reflecting our belief that AYX will not make any substantial expenditures or investments for the foreseeable future. AYX's net working capital (NWC) is also expected to be constant at 15% of revenue growth until perpetuity.

The beta is calculated based on a three-year time horizon with a weekly frequency. We felt a daily frequency was overly noisy and a monthly frequency would leave us with too few data points to run a reliable regression. The market risk premium was obtained through Aswath Damodaran's calculation, using his updated equity risk premium of 5.20% on January 2020. We find his figure to represent the true value of the risk premium.

Through our model we calculate the value of equity and then subtract the value of equity options issued by the firm. Our reasoning being the volatility of the stock is relatively high. We build in the high probability and expected cost of the options being exercised by the employees. To pay for these options, the company will use cash flows that would have been otherwise available to shareholders to buy back shares instead. Using the current 65.08 million total shares outstanding, we arrive at a final valuation of $145.96 per share.

Scenario Analysis - Grey Sky and Blue Sky

In the grey sky case of our DCF valuation, we assume that AYX's revenues will increase at a slower rate - in this case 5% lower - gradually until perpetuity. In addition, we assume that AYX will not be able to reach as high of an EBIT margin by 2023 and in perpetuity, in this case being 20% and 25%, respectively. We attribute part of the higher costs to a ballooning of selling and marketing expenses as it aggressively pursues higher growth. Additionally, we implement a 20% effective tax rate held steady through maturity beginning in 2019, as mentioned in AYX's Q3 earnings call and 10-Q. We arrive at a valuation of $89.12 per share.

In the blue sky case of our DCF valuation, we forecast the same gradual increase in effective tax rate as our base case scenario, estimate a 5% increase in overall revenues, and forecast a steeper improvement of EBIT margins at year 2023 and in perpetuity of 25% and 31%, respectively. This increased margin range is not far off from similar mature computer software company ranges. We arrive at a valuation of $188.34 per share. For corresponding visuals, please refer to Appendices 2.e. - 2.h.

Market Multiples Valuation - A High Price Is Placed on High Growth

This model seeks to arrive at a valuation based on the value of comparable firms that operate in a similar environment, exposed to similar business and economic conditions.

Peer Group Selection

	SWOT Analysis Feb 2020
Strengths	• Liquid assets feed into M&A strategies • Strong revenue growth • Healthy gross margins • Positive FCF • The software publishing industry is in the growth stage • Unique product (code-free) • Accreditive history of M&A
Weaknesses	• Low international market share • Recently acquired board • Excessively high PE • Vulnerability to data breaches
Opportunities	• Acquired by a larger firm • Land & Expand [coordinates with Industry success and movement] • Realism of customer reliance on software • Replace office roles (IT) • Future R&D = inexpensive through M&As
Threats	• Browser-based competition • Other Competitors (including partners) attacking their niche • Difficult to expand internationally due to competitors' presence • Subject to market or industry shock • Data breach

Figure 4.2 - SWOT Analysis
Source: Team Analysis

Ascertaining the comparable companies group for AYX requires that the selected peer group exhibit similar future growth rates and risk. Given that AYX's software suite targets a unique niche in the data analysis field, we determined that further analysis of comparable companies was required beyond broadly using other companies in the industry. We produced our own unique peer group list by analyzing the correlation of returns between AYX and other firms in the software services industry. In addition, we regressed the returns over the three years AYX has been listed. For further details, refer to Appendix 8.

Multiple Selection

Considering the industry landscape and company fundamentals, we decided utilizing a price-earnings-growth (PEG) multiple would be most applicable in pricing AYX. Given that AYX operates in the burgeoning data analytics industry, we do not utilize P/E or EV/EBITDA multiple valuation because they do not consider the future expected growth of the company. Despite several comparables being excluded from the PEG multiple valuation due to change in forecasted EPS from negative to positive values resulting in non-applicable long term EPS growth CAGRs, we believe the ratio best takes into account AYX's considerable expected growth rate. Even though earnings are more easily subject to manipulation, it serves as a clearer representation of what investors are willing to pay.

Price Earnings Growth Multiple

In determining the price target for AYX, we opted to have 40% of our valuation be derived from a multiple calculation. Taking the median PEG ratio of the eligible companies in our comparables list results in an industry value of 2.14. Multiplying this ratio by our 2020 forward EPS and long term EPS CAGR projections for AYX returns a valuation of $149.97 (based upon team assessment quantified in Appendix 1). Using solely the multiple valuation method, we would conclude that AYX is currently trading at a 3.48% discount. This valuation method further establishes our view that the market has already priced in most of AYX's expected growth.

Binomial Option Pricing - Adding Value to our Valuation

A material reason for our outlook on AYX is its potential to be acquired. To incorporate this possibility into our valuation and investment recommendation, we employed the use of a single-period Binomial Option Pricing Model.

If we treat the potential of this stock being acquired as an upside, and the lack of such an event as a downside, it offers a method of accounting for a factor that is important to the valuation of the stock. The time horizon of this model is one year in order to remain consistent with our one-year target price forecast.

Upon calculating a potential acquisition premium to be approximately 36.5% (based on historical data further explained in Appendix 5.b.), a stock value drop of 0% (based on no change to the current price), and using a risk free rate of 1.48%, the model calculates the present value of an acquisition premium through risk-neutral probabilities to be $2.11. This beneficial factor is then added to our initial target price of $147.56 to create an updated and more inclusive target value of $149.67. Adjacent is Figure 4.4, a Binomial Tree Diagram, representing the events. For a detailed description on assumptions, methodology, and calculations, please refer to Appendix 5.

Monte Carlo Analysis - Confirming the Valuations

Our Python-based analysis of a random walk simulation of AYX's price takes a look at the log returns over a six-month time period, starting from July 30, 2019 and ending January 31, 2020. This period best displays a variety of price movements and vectors.

The average daily log return for this time period was 0.17% with a standard deviation of 3.21%. This resulted in a drift value of .119. We then simulated a period of 252 days after the January 31st closing price 1000 times. The median price for our simulation resulted in $186.48 and the mean of all simulations was $212.68. Prices in the 5% percentile fell below $87.70 while prices in the 95th percentile were below $412.26.

The results of a price performance-based random-walk simulation produced a scenarios with 37.2% of prices supporting a BUY recommendation, 48.9% supporting a HOLD recommendation, and 13.9% that supporting a SELL recommendation, with a limits of $110 for SELL, $160 for BUY, and HOLD in between these ranges.

Our valuation is within the fifth and ninety-fifth percentile, and relatively close to the median.

PEG Multiple Valuation	$149.97
AYX	**Forward Value**
Current Price	$144.92
Upside Potential	3.48%
2020E Earnings	$1.06
5 Year Forward Earnings CAGR	66.25
	COMPARABLES
	COMPARABLES LIST
	Forward (2020)
Company	**PEG**
SolarWinds Corp	1.03
j2 Global Inc	1.12
Dropbox Inc	1.36
CDK Global Inc	1.57
Splunk Inc	1.86
Hubspot Inc	1.96
SPS Commerce Inc	2.06
Proofpoint Inc	2.21
Nuance Communications Inc	2.31
Paylocity Holding Corp	2.50
New Relic Inc	4.56
Guidewire Software Inc	4.64
Pegasystems Inc	7.38
Coupa Software Inc	9.69
	PEG
Comp Average	2.66
Comp Median	2.14
Alteryx (Implied)	2.06

Figure 4.3 - Multiples Valuation
Source: Team Analysis

1 Step Binomial Option Bricing Model, Binomial Tree

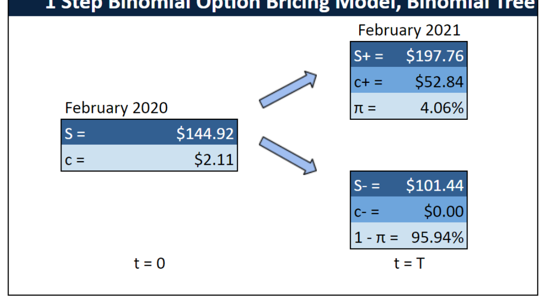


Figure 4.4 - Binomial Option Pricing Model
Source: Team Analysis

Selected Key Financials - Positioned Above its Peers

Profitability Ratios

Gross margin has historically been strong for AYX as costs of goods and services is, and will, continue to be a less significant expense when compared to SG&A and R&D expenses. Forecasting continued strong revenue growth, we project gross margin to improve to 96% in 2020 as COGS remain largely stable. AYX outperformed its peers' operating margins in 2018, as it transitioned to a cash flow positive firm. Its operational excellence however is dampened by significant spending in selling and marketing which constituted 50% of operational costs in 2018. Increases in operational expenses were brought about by increases in the number of associates as AYX seeks to capture "meaningful opportunity" globally. We expect operating margin to further improve in the future as selling and marketing expenses remain largely stable. Currently, the primary portion of these expenses were attributed to an increase in employee related costs and other line items such as marketing programs and international marketing teams. Comparing the normalized net margin of AYX against its peers demonstrates the differential ability of the company to effectively translate growth to the bottom-line.

Profitability (2019)		
	AYX	Peer Average
Gross Margin	94%	68%
Operating Margin	14%	-17%
Net Margin	8%	-19%

Figure 5.1 - Profitability Ratios AYX
Source: Bloomberg

Liquidity and Solvency Ratios

With a higher current and cash ratio compared to peers, AYX is well positioned to pay off short term liabilities. In 2019 Q3, we saw an increase in cash and cash equivalents of over 50% from Q2 numbers from $426.8 million to $642.5 million which was related to the convertible note offering completed in August. After the offering of $350M 0.5% convertible senior notes due in 2024, $350M 1% convertible senior notes due in 2026, and issuance of 2.2 million common stock to retire approximately $145.2M of existing 0.5% convertible senior notes, AYX saw an increase in long-term debt from 28.4M to 654.0M. AYX's relatively strong interest coverage ratio in 2019 (when compared to its competitors) can be attributed in large part to recent top line growth translating to positive EBITDA as well as a temporarily lower interest expense. As a result, we do not anticipate any financial difficulties arising resulting from this debt issue. The aggregate net proceeds from the offering is to be used for general corporate purposes including but not limited to investments, acquisitions, or other strategic transactions. We anticipate that AYX will seek to continue its strategic acquisition activity in the software services industry with these proceeds. Continuing this trend of acquisitions could potentially lead to damaging inorganic growth related to overpaying for the target of the acquisition. Historically, the trend of M&A has destroyed company value especially given the current industry environment showing inflated valuations.

Liquidity and Solvency Ratios (2019)		
	AYX	Peer Average
Current Ratio	3.71	2.34
Cash Ratio	2.65	1.69
D/E Ratio	188%	67%
Interest Coverage	4.04	-3.33

Figure 5.2 - Liquidity & Solvency
Source: Bloomberg, Team Estimates

Efficiency Ratios

AYX has an accounts receivable turnover of 3.50, compared to a peer average of 12.34 in 2019. In addition, AYX has a higher days sales outstanding than its peer group. This implies that AYX is less effective than peers in extending credit and collecting on receivables. Potential acquirers could view this comparative weakness as an opportunity to enact a more restrictive credit and collection policy to reduce working capital.

Efficiency Ratios (2019)		
	AYX	Peer Average
A/R Turnover	3.50	12.34
Days Sales Outstanding	62.46	59.84

Figure 5.3 - Efficiency Ratios
Source: Bloomberg, Team Estimates

Dupont Profitability Analysis

AYX has an asset turnover ratio of 0.30 in 2019 compared to the peer average of 0.61 implying that AYX is not managing its assets as efficiently as its peer group as their total asset turnover has remained under the peer average from 2017 through 2019. Contrasting this with AYX's comparably better normalized profit margin and lower leverage ratio shows the company's operational competency and ability to translate growth to the bottom line. A similar ROA to ROE indicates AYX's ability to maintain growth without reliance on debt. We forecast ROE and ROA to be 13.89% and 4.64% in 2020 respectively (please refer to Appendix 4 for financial ratio forecasts). Going forward, our forecasted ROE growth is driven primarily by improvements in total asset turnover. Maintaining higher sales growth coupled with an improved operating margin prompts our outlook of improving asset efficiency above peer average.

Dupont Ratios (2019)		
	AYX	Peer Average
Asset Turnover	0.30	0.61
Profit Margin	0.08	-0.07
Financial Leverage	3.21	8.01
ROA	0.02	-0.04
ROE	0.08	-0.34

Figure 5.5 - Dupont Analysis
Source: Bloomberg, Team Estimates

Selected Financials Ratios

In comparing AYX's multiple values to its peer group, there is a consistent premium present in priced-based metrics. Even when factoring in future growth, AYX remains expensive compared to its competitors. This is consistent with our belief that much of the firm's growth potential is already being accounted for by the market. Despite this,

Peer Multiples (2020E)		
	AYX	Peer Average
P/E	131.50	114.20
PEG	3.13	2.62
EV/EBITDA	90.82	52.70
P/S	15.52	8.64
EPS	1.06	0.71

Figure 5.4 - Peer Multiples
Source: Bloomberg, Team Estimates

we anticipate 2020 EPS to be $1.06 reflecting consistent sales growth translating to strong bottom line growth (forecasts detailed in pro-forma financial statements in Appendix 1).

INVESTMENT SUMMARY

An Expensive Stock With Growth Potential

We issue a **HOLD** recommendation for AYX with a one year target price of $149.67. This offers a potential upside of 3.28% from February 4th's closing price of $144.92. AYX has shown high sales growth both domestically and internationally as well as the ability to translate that growth to the bottom line. We're confident in management's ability to leverage established relationships with strategic partners and current customers to maintain strong growth. AYX's competitive advantages and strong financials relative to peers will ensure the company's niche in the industry along with expanding market share. Another of AYX's appeals is its desirability as a takeover target for a tech giant that wants to realize great synergies from AYX assets or another company, such as its first ever "Global Strategic Partner", PwC, that also wants to effectively penetrate into the data analytics software industry. However, when compared to industry comparables and normalized by growth, the stock reveals itself as somewhat expensive, meaning that the expected high-growth is currently priced in.

INVESTMENT RISKS

STRATEGIC RISKS - Maintaining growth in a globally competitive landscape.

S1. Growth stagnates in International Markets

International revenues have been increasingly growing since 2014, as seen in Figure 7.1. AYX's growth strategy could be affected if it fails to increase its overall customer base internationally, expand domestically, and fail to add to its value proposition.

- Mitigant: AYX must maximize the use of its existing distribution channels and channel partners to expand its customer base. AYX currently relies on reseller partners for distribution and customer expansion.

S2. Competition from International Players in Application Software

As shown in Figure 7.4, AYX has made acquisitions in Europe and Australia in order to boost its international exposure (Semanta, Czech Rep., Alteryx Anz pty, Aus). Geographical risks include competition from large competitors such as Accenture, SAP SE, and Capgemini. Expansion to European markets can be slowed by dominating market share of SAP in the European Markets as shown in Figure 7.3.

- Mitigant: AYX can leverage its competitive pricing in these markets as we see a slowing in growth throughout the Euro-area and many other areas of the world.
- Mitigant: Partnerships with global leaders, such as AYX's first named "Global Strategic Partner", PricewaterhouseCoopers, will lead the way to international customer penetration. Refer to Appendices 6 and 7 for more information on AYX Global Strategic Partnership and our Porter's Five Forces analysis on AYX.

S3. Loss of Intellectual Property in Emerging Markets

China being the largest potential customer base, there is a risk of sharing intellectual property and over transparency as a requirement of conducting business in the country, or run the risk of being shut out.

- Mitigant: AYX must limit exposure to such markets until proper controls are in place to protect its intellectual property.
- Mitigant: Maintaining a larger focus on Western European markets provides a stronger growth opportunity and reduces the risk for IP theft.

S4. Acquisition Risk in a dynamic business environment

Yhat Inc. and Feature Labs Inc. are highly technical firms that focus on platform development and feature engineering. These acquisitions add increasing pressure to find top talent in a historically low, 3.6% (Oct 2019), unemployment rate environment. Currently, Standard and Poors is estimating the forward P/E for Q4 2021 to be 19.21. This high ratio lowers the chance of the company from being acquired due to an overall sentiment of inflated valuations.

- Mitigants: AYX's "Global Strategic Partnerships" are a great method of testing possible synergies between possible companies interested in entering the data analytics marketspace through acquisition of acquire AYX. M&A activity has increased over the last 3 years as shown in Figure 7.5.

S5. Young company with a gold standard in employee compensation

AYX values the relationship with its employees; they are considered the "lifeblood of the company". AYX has set a gold standard for employee compensation and must be able to

Revenues - By Location			
	Domestic	International	Int. %
2014	38	4.8	11.21%
2015	53.8	7.7	12.52%
2016	85.8	16.4	16.05%
2017	131.6	29.7	18.41%
2018	253.6	74.8	22.78%

Figure 7.1 - Revenues by Location
Source: Company Filing 2018

Customer Segment Revenue		
	2018 (in thousands)	% of Total
Subscription Software License	$124,669	49%
PCS and Services	$128,901	51%

Figure 7.2 - Customer Revenue Segment
Source: Company Filing 2018

SAP Software Revenues		
	(Millions USD)	% Change
2018 Q4	$5,788.7	-
2019 Q1	$3,848.8	-33.51%
2019 Q2	$4,185.3	8.74%
2019 Q3	$4,161.3	-0.57%
2019 Q4	$5,381.2	29.32%

Figure 7.3- SAP Software Revenue
Source: SAP Filing 2018

AYX Past Aquisitions		
Date	Company	Reason
2017-06-06	Yhat Inc.	End-to-end data science platform
2017-06-06	Semanta SRO	Data governance and cataloging
2018-02-26	Alteryx ANZ Pty. Ltd.	Retailer and Distributor
2019-04-04	Clearstory Data Inc.	Enterprise-scale analytics platform developer
2019-10-04	Feature Labs Inc.	Feature engineering and talend acquisition

Figure 7.4 - Aquisitions
Source: Eikon, Thomson Reuters

cover talent acquisition costs such as competitive compensation and stock option bonuses. Please refer to Appendix 13 for more details regarding employee benefits.

COMPANY SPECIFIC RISKS - Company controls from within

C1. Seasonality of AYX Products leads to contractual risks

AYX has an obligation to provide support regarding installation, licensing, workflow development, and technical and functional matters. Contract duration is largely driven by its larger customers entering into longer-term contracts. The average contract duration is about 2 years; this is a short time span for software that handles company analytics. The larger the time frame for company data, the more accurate their analytics will be. AYX is exposed to subscriber seasonality risk within its contracts and billing.

Mergers & Aquisitions (in Billion USD)				
	US	%Change	Software	%Change
2016	$1,243.31	-	$50.77	-
2017	$1,267.18	1.9%	$49.30	-2.9%
2018	$1,582.37	24.9%	$98.74	100.3%
2019	$1,954.79	23.5%	$141.85	43.7%

Figure 7.5 - M&A Activity in the US

Source: Eikon, Thomson Reuters

C2. Establishing a foundation for the rest of the AYX product line-up

Customers' first point of contact is the Designer Platform. Usability and an understanding of the platform is critical to AYX's growth. Should sales growth of Designer slow due to ineffective marketing or diminishing demand, growth of auxiliary products such as Connect, Server, and Promote may suffer in turn.

C3. Increasing pressure on data governance in a cloud dependent environment

Failure to adhere to strong data governance standards can result in cybersecurity breaches. This will have an adverse effect on company morale, financials, and operations. Such an event occurred in October 2017, and its stock value decreased by 4% on the news. However, the subject data was strictly marketing information; if the information were to be more sensitive, a much greater drop would be expected.

- Mitigant: Fully optimize synergies among its 2017 acquisition of Semanta SRO to be better prepared for future data governance incidents.

C4. New tools for the Line-of-Business Employee & Citizen Data Scientists

AYX's target customer is not the typical IT person. The line-of-business worker or citizen data scientist may fail to fully adopt the AYX platform. The line-of-business worker must learn a new platform too, but he/she might not quickly adopt the platform, and instead opt for a different solution.

FINANCIAL RISKS

F1. Debt Issuance

AYX has gone from having almost no debt to recently hosting around $885 million in long-term debt. The company's long-term debt to equity ratio is a concern in respect to its credit quality. Credit quality has not improved over a quarter-to-quarter basis. The rating of its credit is estimated to be BBB. If the company were to experience a slowdown in customer growth this will have an impact on the company's ability to pay off its debt obligations.

Leverage Analysis				
	LTD	Cash	Equity	LTD/ Equity
2018 Q1	0.00	59.10	156.10	0.00
2018 Q2	163.30	98.60	185.10	0.88
2018 Q3	170.90	85.30	194.70	0.88
2018 Q4	173.60	90.00	301.80	0.58
2019 Q1	0.00	127.00	325.80	0.00
2019 Q2	0.00	108.00	331.40	0.00
2019 Q3	623.70	642.50	386.70	1.61

Figure 7.6 - Debt Analysis

Source - AYX Q3 2019 10-Q Filing

LEGAL RISKS

L1. Growth in cloud services open possibility for future data governance concerns

The risks of data breaches and resulting legal ramifications pose the largest legal risk to AYX. AYX experienced a data breach in late 2017, but unlike Experian's well-known breach, AYX''s involved customer information regarding lifestyle habits. AYX has taken steps to improve its cybersecurity and make corporate governance a priority, but the future of tech companies and their handling of data will be heavily scrutinized.

MARKETWIDE RISKS

M1. High Valuations

High P/E has AYX vulnerable in the event of a downward market correction. Decade-long expansionary period and stellar equity performance in 2019 occurred despite an estimated fourth consecutive quarter of S&P earnings decline. Any earnings miss or less-than-expected revenue growth risks investor sentiment or share price to drop.

M2. Momentum Risk - Good Company, Bad Stock

In Sep. 2019, AYX experienced a price correction from $150 to $90, which is not uncommon for stocks with high growth and exposes investors to potential losses.

APPENDIX

Appendix 1: Pro Forma Financial Statements

Appendix 1.a. Pro Forma Income Statement (All Figures in Thousands)

Income Statement	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Revenue	$85,790	$131,607	$253,570	$404,300	$585,094	$887,806	$1,247,320	$1,607,931
COGS	$16,026	$21,803	$22,800	$24,624	$26,101	$27,798	$29,605	$31,085
Gross Profit	$69,764	$109,804	$230,770	$379,676	$558,993	$860,008	$1,217,715	$1,576,846
Gross Margin (%)	81%	83%	91%	94%	96%	97%	98%	98%
Selling & Marketing	$57,585	$66,420	$109,284	$143,542	$195,487	$274,744	$341,911	$394,444
General & Administrative	$17,720	$32,241	$48,267	$86,504	$120,862	$175,328	$228,648	$287,662
Research & Development	$17,481	$29,342	$43,449	$94,919	$134,694	$197,911	$259,761	$328,345
Other Operating Expense	-$66	-$1,415	-$642	-$1,894	-$2,646	-$3,839	-$5,006	-$6,298
Operating Profit	-$22,956	-$16,784	$30,412	$56,605	$93,615	$159,805	$249,464	$369,824
Operating Margin (%)	-27%	-13%	12%	14%	16%	18%	20%	23%
Interest Expense, Net	$1,028	$205	$4,336	$22,607	$22,607	$22,607	$22,607	$22,607
Abnormal Losses	$66	$1,415	$642	-	-	-	-	-
Pretax Income	-$24,050	-$18,404	$25,434	$33,998	$71,008	$137,198	$226,857	$347,218
Income Tax Expense	$208	-$905	-$2,586	$464	$1,936	$5,611	$12,371	$23,669
Net Income	-$24,258	-$17,499	$28,020	$33,534	$69,072	$131,587	$214,486	$323,549

Source: Company Filings and Team Estimates

Appendix 1.b. Pro Forma Balance Sheet (All Figures in Thousands)

Balance Sheet	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Assets								
Cash & Cash Equivalents	$31,306	$119,716	$89,974	$681,212	$701,427	$749,824	$821,384	$906,721
Short Term Investments	$21,394	$54,386	$239,718	$226,177	$237,099	$244,335	$293,262	$337,610
Short Term Receivables	$35,367	$49,797	$94,922	$108,326	$120,232	$167,299	$188,545	$264,542
Other Current Assets	$12,371	$18,440	$37,199	$67,717	$83,886	$118,505	$136,280	$149,909
Total Current Assets	$100,438	$242,339	$461,813	$1,083,432	$1,142,644	$1,279,963	$1,439,472	$1,658,782
Net Property, Plant & Equipment	$6,212	$7,492	$11,729	$54,765	$82,148	$90,362	$105,911	$144,600
LT Investments & Receivables	$0	$19,964	$108,589	$133,567	$144,874	$155,767	$180,423	$216,754
Other Assets	$4,765	$21,621	$36,036	$88,600	$105,804	$137,545	$178,809	$232,451
Total Noncurrent Assets	$10,977	$49,077	$156,354	$276,932	$332,826	$383,674	$465,143	$593,805
Total Assets	$111,415	$291,416	$618,167	$1,360,364	$1,475,469	$1,663,637	$1,904,615	$2,252,587
Liabilities & Shareholders' Equity	**2016**	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**
Payables & Accruals	$14,198	$20,298	$40,565	$61,604	$89,326	$129,523	$138,014	$149,323
ST Debt	$329	$329	$0	$69,252	$72,897	$80,187	$88,205	$93,418
Other Current Liabilities	$71,050	$110,213	$84,015	$70,206	$84,247	$92,672	$101,939	$109,075
Total Current Liabilities	$85,577	$130,840	$124,580	$201,063	$246,471	$302,382	$328,159	$351,815
LT Debt	$0	$0	$173,647	$726,900	$726,900	$726,900	$726,900	$726,900
Other LT Liabilities	$4,266	$7,072	$18,122	$8,682	$9,290	$9,940	$10,636	$11,381
Total Noncurrent Liabilities	$4,266	$7,072	$191,769	$735,582	$736,190	$736,840	$737,536	$738,281
Total Liabilities	$89,843	$137,912	$316,349	$936,645	$982,661	$1,039,222	$1,065,695	$1,090,096
Preferred Stock	$87,448	$0	$0	$0	$0	$0	$0	$0
Share Capital & APIC	$20,180	$257,404	$315,297	$402,798	$402,798	$402,798	$402,798	$402,798
Retained Earnings	-$86,047	-$103,546	-$12,908	$20,626	$89,699	$221,286	$435,772	$759,321
Other Equity	-$9	-$354	-$571	$295	$312	$331	$351	$372
Total Shareholders' Equity	$21,572	$153,504	$301,818	$423,719	$492,809	$624,415	$838,921	$1,162,491
Total Liabilities & Shareholders' Equity	$111,415	$291,416	$618,167	$1,360,364	$1,475,469	$1,663,637	$1,904,615	$2,252,587

Source: Company Filings and Team Estimates

Appendix 1.c. Pro Forma Statement of Cash Flows (All Figures in Thousands)

Statement of Cash Flows	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Cash Flows From Operating Activities								
Net Income	-$24,258	-$17,499	$28,020	$33,534	$69,072	$131,587	$214,486	$323,549
Depreciation & Amortization	$1,677	$3,957	$3,836	$3,913	$4,030	$4,171	$4,309	$4,481
Stock Based Compensation	$3,284	$8,886	$16,647	$29,195	$48,172	$79,483	$131,148	$216,394
Other Non-Cash Adjustments	$1,137	$1,252	$4,886	$23,928	$27,569	$31,765	$36,600	$42,171
Change in Non-Cash Working Capital	$12,129	$22,509	-$27,300	-$22,605	-$27,119	-$45,407	-$53,927	-$54,092
Cash From Operating Activities	-$6,031	$19,105	$26,089	$67,965	$121,724	$201,600	$332,616	$532,503
Cash Flows From Investing Activities								
Change in Fixed & Intangible Assets	-$4,307	-$3,669	-$6,728	-$8,074	-$9,688	-$11,626	-$13,951	-$16,741
Change in LT Investment	$0	$0	$0	$0	$0	$0	$0	$0
Net Cash From Acquisitions & Divestures	$0	-$9,097	-$3,537	-$11,189	-$12,308	-$13,539	-$14,893	-$16,382
Other Investing Activities	$16,042	-$53,655	-$260,593	-$19,539	-$62,514	-$111,596	-$216,132	-$364,630
Cash From Investing Activities	$11,735	-$66,421	-$270,858	-$38,802	-$84,511	-$136,761	-$244,976	-$397,753
Cash Flows From Financing Activities								
Dividends Paid	$0	$0	$0	$0	$0	$0	$0	$0
Net Debt	$1,015	$132,033	$223,669	$644,623	$3,645	$7,290	$8,019	$5,213
Net Equity	-$192	$3,668	$11,424	$9,336	$10,456	$11,711	$13,116	$14,690
Other Financing Activities	$0	$0	-$19,113	-$91,743	-$30,973	-$35,309	-$37,075	-$38,929
Cash From Financing Activities	$823	$135,701	$215,980	$562,216	-$16,872	-$16,309	-$15,940	-$19,026
Effect of Foreign Exchange Rates	$0	$25	-$166	-$141	-$127	-$133	-$140	-$147
Net Change in Cash & Cash Equivalents	$6,527	$88,410	-$29,742	$591,238	$20,215	$48,397	$71,560	$115,577
Beginning Cash	$24,779	$31,306	$119,716	$89,974	$681,212	$701,427	$749,824	$821,384
Ending Cash	$31,306	$119,716	$89,974	$681,212	$701,427	$749,824	$821,384	$936,961

Source: Company Filings and Team Estimates

Appendix 2: Discounted Cash Flow

Appendix 2.a.: Revenue Forecast Assumptions

In millions	2015A	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Revenue, Domestic	46.1	69.4	101.9	178.8	277.14	388.00	562.59	759.50	949.38
Domestic Revenue Growth		50.54%	46.83%	75.47%	55.00%	40.00%	45.00%	35.00%	25.00%
Domestic Revenue / Total Revenue	85.69%	80.89%	77.43%	70.50%	68.55%	66.31%	63.37%	60.89%	59.04%
Revenue, International	7.7	16.4	29.7	74.8	127.16	197.10	325.21	487.82	658.55
International Revenue Growth		112.99%	81.10%	151.85%	70.00%	55.00%	65.00%	50.00%	35.00%
International Revenue / Total Revenue	14.31%	19.11%	22.57%	29.50%	31.45%	33.69%	36.63%	39.11%	40.96%
Total Revenue	53.8	85.8	131.6	253.6	404.30	585.09	887.81	1,247.32	1,607.93
Total Revenue Growth		59.48%	53.38%	92.71%	59.42%	44.72%	51.74%	40.49%	28.91%

Appendix 2.b.: Research and Development

AYX is rapidly expanding in the data analytics software industry. As such, the company must position its business model in a way that allows the company to provide excellence in results. One way of creating a great product organically is through heavy investment in R&D. AYX currently has a research and development center in Ukraine and the Czech Republic. Recently, AYX acquired 100% of ClearStory Data Inc. to augment its R&D centers and help develop new technologies. In addition, a significant amount of AYX's R&D costs are used to fund stock-based compensations. As of September 2019, AYX had a headcount of 285 research and development employees. The results of these facts are modeled in our DCF Forecast Assumptions (Appendix 2.c), where we reflect more aggressive R&D spending from 2019 onwards.

Appendix 2.c.: Discounted Cash Flow Forecast Assumptions

Alteryx, Inc. (AYX)		2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Revenue	% growth	92.7%	59.4%	44.7%	51.7%	40.5%	28.9%	25.0%	22.5%	20.0%	17.5%	4%
Domestic	% growth	75%	55%	40%	45%	35%	25%	20%	18%	16%	15%	4%
International	% growth	152%	70%	55%	65%	50%	35%	30%	28%	25%	20%	4%
COGS	% revenue	88.2%	86%	84%	82%	80%	77%	75.8%	74.6%	73.4%	72.2%	71%
Cost of Rev	% COGS	10%	7%	5%	5%	5%	5%	5%	5%	5%	5%	5%
S & M	% COGS	49%	41%	40%	39%	36%	35%	35%	35%	35%	35%	35%
G & A	% COGS	22%	25%	26%	24%	23%	23%	23%	23%	23%	23%	23%
R & D	% COGS	19%	27%	28%	27%	26%	27%	27%	27%	27%	27%	27%
Depr/Amrt	% revenue	1.5%	1.1%	0.8%	0.6%	0.5%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%
EBIT	% revenue	11.8%	14%	16%	18%	20%	23%	24.2%	25.4%	26.6%	27.8%	29%
Interest Expense			3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Tax Rate		-10%	1.4%	2.7%	4.1%	5.5%	6.8%	8.2%	9.5%	10.9%	11.0%	12.27%
Net Income	% revenue	11.1%	8.3%	11.8%	14.8%	17.2%	20.1%	21.2%	22.1%	23.0%	24.2%	25%
Capex	% revenue	2.65%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
NWC	% Δ revenue	10.8%	5.6%	4.6%	5.1%	4.3%	3.4%	3.0%	2.8%	2.5%	2.2%	1%

Appendix 2.d.: Discounted Cash Flow Model

In Thousands USD	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Revenues	404,300	585,094	887,806	1,247,320	1,607,931	2,009,914	2,462,145	2,954,574	3,471,624	3,610,489
COGS	347,695	491,479	728,001	997,856	1,238,107	1,523,515	1,836,760	2,168,657	2,506,513	2,563,447
EBIT	56,605	93,615	159,805	249,464	369,824	486,399	625,385	785,917	965,112	1,047,042
Taxes	772	2,553	6,536	13,604	25,210	39,787	59,683	85,717	106,577	128,472
Net Capex	5,852	9,861	16,856	25,204	33,501	42,828	53,412	65,011	77,240	80,330
NWC	22,605	27,119	45,407	53,927	54,092	60,297	67,835	73,864	77,558	20,830
FCFF	27,376	54,083	91,006	156,729	257,021	343,487	444,455	561,324	703,737	817,411
Discount Period (yrs)	1	2	3	4	5	6	7	8	9	10
Discount Factor	0.92	0.85	0.78	0.72	0.66	0.61	0.56	0.51	0.47	0.43
Present Value of FCFF	25,182	45,759	70,828	112,200	169,249	208,054	247,632	287,676	331,750	8,172,855
								Value of Equity per Share	$	**145.96**

Appendix 2.e. Bull Scenario Discounted Cash Flow Assumptions

Forecast Assumptions		2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Revenue	% growth	92.7%	64.4%	49.7%	56.7%	45.5%	33.9%	25.0%	22.5%	20.1%	17.7%	4%
Domestic	% growth	75%	60%	45%	50%	40%	30%	23%	20%	18%	16%	4%
International	% growth	152%	75%	60%	70%	55%	40%	28%	26%	23%	20%	4%
COGS	% revenue	88.2%	85.0%	82.5%	80.0%	77.5%	75%	74%	73%	72%	71%	69%
Cost of Rev	% COGS	10%	7%	5%	5%	5%	5%	5%	5%	5%	5%	5%
S & M	% COGS	49%	42%	40%	40%	40%	35%	35%	35%	35%	35%	35%
G & A	% COGS	22%	25%	26%	25%	25%	23%	23%	23%	23%	23%	23%
R & D	% COGS	19%	27%	28%	27%	27%	27%	27%	27%	27%	27%	27%
Depr/Amrt	% revenue	1.5%	1.1%	0.8%	0.6%	0.5%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%
EBIT	% revenue	11.8%	15%	17.5%	20%	23%	25%	26%	27%	28%	29%	31%
Interest Expense			3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Tax Rate		-10%	1.4%	2.7%	4.1%	5.5%	6.8%	8.2%	9.5%	10.9%	11.0%	12.27%
Net Income	% revenue	11.1%	9.4%	13.5%	17.0%	19.8%	22.2%	23.0%	23.7%	24.4%	25.3%	26.7%
Capex	% revenue	2.65%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.25%
NWC	% Δ revenue	10.8%	6%	5%	5%	5%	4%	3%	3%	3%	2%	1%

Appendix 2.f.: Blue Sky Discounted Cash Flow Model

In Thousands USD	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Revenues	416,980	624,256	978,272	1,422,988	1,905,072	2,381,340	2,917,141	3,500,570	4,113,169	4,277,696
COGS	354,433	515,011	782,618	1,102,816	1,428,804	1,762,191	2,129,513	2,520,410	2,920,350	2,951,610
EBIT	62,547	109,245	195,654	320,172	476,268	619,148	787,628	980,159	1,192,819	1,326,086
Taxes	772	853	2,979	8,002	17,460	32,466	50,646	75,166	106,903	131,723
Net Capex	5,852	9,861	16,856	25,204	33,501	42,828	53,412	65,011	77,240	80,330
NWC	24,507	31,091	53,102	66,707	72,313	71,440	80,370	87,514	91,890	24,679
FCFF	30,933	64,238	115,324	206,288	330,424	444,798	567,140	706,903	875,734	1,053,142
Discount Period (yrs)	1	2	3	4	5	6	7	8	9	10
Discount Factor	0.92	0.85	0.78	0.72	0.66	0.61	0.56	0.51	0.47	0.43
Present Value of FCFF	$ 28,453	$ 54,352	$ 89,754	$ 147,679	$ 217,584	$ 269,420	$ 315,986	$ 362,284	$ 412,831	$10,529,809
									Value of Equity per Share	$ 188.34

Appendix 2.g.: Grey Sky Discounted Cash Flow Assumptions

Forecast Assumptions		2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Revenue	% growth	92.7%	54.4%	39.7%	46.8%	35.5%	23.9%	22.9%	21.5%	20.1%	17.5%	4%
Domestic	% growth	75%	50%	35%	40%	30%	20%	19%	18%	17%	15%	4%
International	% growth	152%	65%	50%	60%	45%	30%	29%	26%	24%	21%	4%
COGS	% revenue	88.2%	88%	86%	84%	82%	80%	79%	78%	77%	76%	75%
Cost of Rev	% COGS	10%	7%	5%	5%	5%	4%	4%	4%	4%	4%	4%
S & M	% COGS	49%	50%	52%	52%	53%	53%	55%	55%	55%	55%	55%
G & A	% COGS	22%	23%	24%	25%	25%	25%	25%	25%	25%	25%	25%
R & D	% COGS	19%	20%	19%	18%	17%	16%	15%	15%	15%	15%	15%
Depr/Amrt	% revenue	1.5%	1.1%	0.9%	0.7%	0.5%	0.5%	0.4%	0.4%	0.4%	0.3%	0.3%
EBIT	% revenue	11.8%	15%	17.5%	20%	23%	25%	26%	27%	28%	29%	31%
Interest Expense			3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Tax Rate		-10%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Net Income	% revenue	11.1%	5.0%	7.9%	10.5%	12.7%	14.7%	15.7%	16.7%	17.7%	18.6%	19.4%
Capex	% revenue	2.65%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.25%
NWC	% Δ revenue	10.8%	5%	4%	5%	4%	3%	3%	3%	3%	2%	1%

Appendix 2.h.: Bear Scenario Discounted Cash Flow Model

In Thousands USD	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Revenues	391,620	547,200	803,106	1,088,469	1,349,113	1,659,409	2,016,182	2,419,418	2,842,816	2,956,529
COGS	344,626	470,592	674,609	892,545	1,079,290	1,310,933	1,572,622	1,862,952	2,160,540	2,217,397
EBIT	46,994	76,608	128,497	195,924	269,823	348,476	443,560	556,466	682,276	739,132
Taxes	4,878	10,800	21,178	34,664	49,443	65,174	84,191	106,772	131,934	143,305
Net Capex	2,930	5,535	8,913	14,739	21,232	27,031	34,065	42,263	51,632	61,520
NWC	20,703	23,337	38,386	42,804	39,097	46,544	53,516	60,485	63,510	17,057
FCFF	11,358	29,036	49,673	92,703	149,731	198,171	259,069	333,056	420,791	510,268
Discount Period (yrs)	1	2	3	4	5	6	7	8	9	10
Discount Factor	0.92	0.85	0.78	0.72	0.66	0.61	0.56	0.51	0.47	0.43
Present Value of FCFF	$ 10,448	$ 24,567	$ 38,659	$ 66,365	$ 98,598	$ 120,035	$ 144,342	$ 170,689	$ 198,366	$ 5,101,903
									Value of Equity per Share	$ 89.12

Appendix 3: Calculated Model Assumptions for DCF & MM

Appendix 3.a.: Beta Calculations

AYX	Monthly	Weekly	Daily
Average	1.141	1.679	1.755
Median	1.689	1.505	1.69

	Equity Beta	Asset Beta	Cash Adjusted Beta	D/E	Tax Rate	Debt	Equity	Cash	Monthly	Daily
Alteryx	1.693	1.125	1.139	57.53%	12.27%	$726.90	$6,732.10	$90.00	1.047	1.791
Anaplan Inc	1.48	1.48	1.552	0.00%	12.27%	$54.60	$7,032.00	$326.90	1.016	1.818
Dynatrace Inc	1.386	1.386	1.395	0.00%	12.27%	$569.80	$7,461.50	$51.30	-4.276	0.965
PROS Holdings Inc	1.068	1.006	1.126	7.03%	12.27%	$182.00	$2,590.20	$295.50	1.168	1.255
Smartsheet Inc	1.707	1.635	1.705	5.00%	12.27%	$64.90	$5,160.80	$213.10	2.04	1.585
Hubspot Inc	1.667	1.551	1.575	8.49%	12.27%	$576.20	$6,787.20	$111.50	1.594	1.599
athenahealth Inc	0.731	0.731	0.753	0.00%	12.27%	$291.10	$5,334.90	$165.10	0.513	0.779
MongoDB Inc	1.457	0.848	0.864	81.94%	12.27%	$244.50	$7,661.50	$147.80	0.186	1.684
Proofpoint Inc	1.455	0.663	0.681	136.04%	12.27%	$798.70	$6,477.60	$185.40	1.636	1.43
RealPage Inc	0.979	0.656	0.683	56.12%	12.27%	$734.70	$5,040.60	$228.20	1.213	1.086
Elastic NV	1.708	1.708	1.81	0.00%	12.27%	$41.90	$5,246.20	$298.00	0.713	1.698
Avalara Inc	0.755	0.755	0.774	0.00%	12.27%	$0.00	$5,714.40	$142.30	0.631	1.357
SolarWinds Corp	1.588	0.952	1.002	76.18%	12.27%	$1,916.00	$5,747.50	$382.60	1.7	1.294
Domo Inc	1.559	0.535	0.701	218.40%	12.27%	$100.10	$644.80	$177.00	0.975	1.237
Coupa Software Inc	1.481	0.985	0.999	57.40%	12.27%	$770.60	$9,649.50	$141.30	1.599	1.85
Average	1.359	1.064	1.116	46.19%	12.27%	$453.22	$5,753.48	$204.71	0.765	1.403
Median	1.469	0.968	1	7.76%	12.27%	$267.80	$5,730.95	$181.20	1.016	1.394

Source: Bloomberg

In calculating AYX's beta, we opted for a bottom-up approach, factoring in the betas of the company's peer group. Performing a weekly regression of the competitor's returns since AYX's IPO against the S&P 500 gives the equity beta column. Unlevering this using Hamada's equation with the company's debt to equity and effective industry tax rate gives us the asset beta or the beta of the company without the impact of debt. After adjusting for the company's cash value as cash is riskless, we find the comparable group's median beta to be 1. Relevering this beta using AYX's debt to equity and the industry effective tax rate results in AYX's beta value of 1.505.

Appendix 3.b.: Weighted Average Cost of Capital Calculations

Assumption	Rate	Methodology
Risk-free rate	1.55%	Forward yield of 10-year US government bond
Implied equity risk premium	5.20%	Excess return above risk-free rate for the US
Beta	1.51	Methodology detailed above
Cost of equity	9.38%	Calculated via CAPM
Pre-tax cost of debt	3.11%	Estimated future borrowing rate of AYX based on a synthetic rating
Tax rate	12.27%	Average effective tax rate for computer software industry using Damodaran assumptions
After-tax cost of debt	2.73%	
WACC	8.71%	Calculated using a target D/E ration of 0.11x

Appendix 3.c.: Terminal Value Calculation

Terminal Value Calculation (In thousands)	
WACC	8.71%
Growth in Perpetuity	4%
Terminal Value at 2028E	18,030,452
PV of Terminal Value	8,172,855
Enterprise Value	9,671,185
Less Net Debt	147,500
Value of Equity	9,818,685
Value of Equity options issued by firm	324,442
Shares Outstanding	65,047
Value of Equity per Share	$ 145.96

Appendix 3.d.: Cost of Debt Calculation

US Synthetic Credit Rating Spread		
Interest Coverage Ratio	Rating	Spread
> 8.50	AAA	0.63%
6.50 - 8.499	AA	0.78%
5.50 - 6.499	A+	0.98%
4.25 - 5.499	A	1.08%
3.00 - 4.249	A-	1.22%
2.50 - 2.999	BBB	1.56%
2.25 - 2.499	BB+	2.00%
2.00 - 2.249	BB	2.40%
1.75 - 1.999	B+	3.51%
1.50 - 1.749	B	4.21%
1.25 - 1.499	B-	5.15%
0.80 - 1.249	CCC	8.20%
0.65 - 0.799	CC	8.64%
0.20 - 0.649	C	11.34%
< 0.199	D	15.12%

Interest Coverage Ratio	2.59
Synthetic Rating	BBB
Spread	1.56%
US 10yr Yield	1.55%
Eff. Tax Rate	12.27%
Cost of Debt	3.11%

Appendix 4: Multiples Model & Key Financial Ratios

Appendix 4.a.: Key Financial Ratios

	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
DuPont Analysis								
Asset Turnover	77.0%	45.2%	41.0%	29.7%	39.7%	53.4%	65.5%	71.4%
Profit Margin	-28.3%	-13.3%	11.1%	8.3%	11.8%	14.8%	17.2%	20.1%
Financial Leverage	5.2	1.9	2.0	3.2	3.0	2.7	2.3	1.9
ROE	-112.5%	-11.4%	9.3%	7.9%	14.0%	21.1%	25.6%	27.8%
ROA	-21.8%	-6.0%	4.5%	2.5%	4.7%	7.9%	11.3%	14.4%
Profitability Ratios								
Gross Margin	81.3%	83.4%	91.0%	93.9%	95.5%	96.9%	97.6%	98.1%
Operating Margin	-26.8%	-12.8%	12.0%	14.0%	16.0%	18.0%	20.0%	23.0%
SG&A/Sales	87.8%	75.0%	62.1%	56.9%	54.1%	50.7%	45.7%	42.4%
R&D/Sales	20.4%	22.3%	17.1%	23.5%	23.0%	22.3%	20.8%	20.4%
Solvency Ratios								
Debt Ratio	80.6%	47.3%	51.2%	68.9%	66.6%	62.5%	56.0%	48.4%
Debt to Equity Ratio	1.6%	0.1%	55.1%	197.7%	198.6%	200.4%	202.4%	203.7%
Interest Coverage Ratio	-22.3	-81.9	6.9	2.5	4.1	7.1	11.0	16.4
Liquidity Ratios								
Current Ratio	1.2	1.9	3.7	5.4	4.6	4.2	4.4	4.7
Cash Ratio	0.6	1.3	2.6	4.5	3.8	3.3	3.4	3.5
Efficiency Ratios								
NWC Turnover	5.8	1.2	0.8	0.5	0.7	0.9	1.1	1.2
Fixed Asset Turnover	13.8	17.6	21.6	7.4	7.1	9.8	11.8	11.1
Shareholder Indicators								
EPS	-$0.95	-$0.35	$0.43	$0.52	$1.06	$2.02	$3.30	$4.97
Earnings Growth	-25.0%	61.1%	224.3%	12.1%	106.0%	90.5%	63.0%	50.8%

Source: Company Filings and Team Estimates

Appendix 4.b.: Multiple Valuation Sensitivity Analysis (2020 EPS vs 5 Year EPS CAGR Forecast AYX)

Multiple Valuation Sensitivity Analysis							
$149.97	$0.50	$0.75	$1.00	$1.06	$1.25	$1.50	$1.75
40	$42.70	$64.05	$85.40	$90.54	$106.75	$128.10	$149.45
50	$53.38	$80.06	$106.75	$113.18	$133.44	$160.13	$186.81
60	$64.05	$96.08	$128.10	$135.81	$160.13	$192.15	$224.18
66.25	$70.73	$106.09	$141.45	$149.97	$176.82	$212.18	$247.54
70	$74.73	$112.09	$149.45	$158.45	$186.81	$224.18	$261.54
80	$85.40	$128.10	$170.80	$181.08	$213.50	$256.20	$298.90
90	$96.08	$144.11	$192.15	$203.72	$240.19	$288.23	$336.26

Source: Team Estimates

Appendix 5: Binomial Option Pricing (BOP) Model

Appendix 5.a.: BOP Model Justification

A binomial model is used when limiting the outcomes of stock movements to strictly two outcomes, over a distinct period of time. As such, we find it appropriate to employ this model when valuing the event that AYX is acquired over the next twelve months. We utilized the model found in *WIley Study Guide for 2017 Level I CFA Exam, "*Volume 5: Fixed Income, Derivatives, & Affirmative Investments," page 206. This particular model allows us to incorporate the events of an acquisition and lack thereof into a two-scenario analysis, using risk-neutral probabilities.

To justify the use of this model, allow us to refer to and expand upon the "Acquisition Potential" section of the report. The software industry is one of the most active industries, in terms of M&As. And AYX exists in an environment that advertises itself to larger firms as a potentially beneficial acquisition. The firm has high growth, recently produced positive cash flow, and has costs centralized in SG&A (which can be largely cut in the event of an acquisition). AYX is also partnered with many large tech and finance firms, making its visibility and presence to a potential acquirer a low concern. One likely buyer stands to be PwC. AYX recently announced that it would be partnering with this consulting firm in a "Global Strategic Partnership." This move was fostered by PwC's $3 billion global investment in new technologies that would add value to its clients and the communities they serve. The consulting firm currently utilizes the following three software, which would greatly benefit from an increased inclusion and incorporation of AYX products and technology:

1. Aura: "Single instance software that provides quality and consistency throughout [an] audit"
2. Halo: "...Market-leading technology that is revolutionising our harnessing the power of data"
3. Connect: "...Global planning tool [that] provides fast, efficient and secure information sharing at every stage of the audit"

As AYX serves to alleviate the need for the repetitive tasks that plague these current software, it stands to potentially improve the efficiency of PwC's employees, and allow them to more effectively use their time to work with clients. As PwC continues to invest in new technology that adds value to its clients, we expect the possible list of strategic synergies to grow. Another potential acquirer stands to be Microsoft, which is One of the most active companies conducting mergers and acquisitions in this specific industry and geography. Seeing that this large firm (and similar companies) caters to an office-based clientele, has a history of purchasing similar companies for strategic purposes [LiveLoop inc. (2015), Metanautix Inc. (2015), Intentional Software (2017), and DataSense (2019)], has a trillion-dollar market cap, boasts mass cash that would make M&As feasible, and would benefit from a length of synergies, it is this team's conclusion that Microsoft, or a similar company, acquiring AYX over the next year is reasonable. As such, the use of this upside scenario, is justified.

In order to uphold the purpose of the model as strictly valuing a potential acquisition, the downside is the absence of this event. In other words, the stock remains at its current price. As such, our downside value is a 0% drop in the stock price. This should isolate the meaning of the model to focus strictly on whether or not AYX is acquired over the next 12 months.

Appendix 5.b.: BOP Model Inputs and Assumptions

The single-step Binomial Option Pricing Model used in this valuation relies on three inputs, the value of an upside, downside, and risk free rate. For this last value, we used the current 1-year treasury yield as a proxy for interest rates, thus we input a value of 1.480% for this assumption.

As this model is used to value the potential benefits and probability of AYX being acquired by a larger firm, the value of an upside is derived from a scenario in which PwC, Microsoft, or another synergy-benefitting company acquires AYX. Similar strategic actions in this industry present an average premium of 28.9% over the past 5 years, and 41.5% over the past 12 months. Seeing that the latter data is most recent, it is weighted 60% in calculating the potential premium. Please refer to the Bloomberg data below for details on these values. In an attempt to introduce conservatism, a 40% weighting is applied to the lower premiums value over the past five years. As an additional note, we do acknowledge the possible event of a bid war between firms attempting to acquire AYX, and that this may increase the premium. However, in an attempt to remain conservative, we have omitted incorporating this possibility into our upside.

Completed, Software-Based, Data-Processing, Technology Firm Acquisitions in the United States Over the Past Five Years:

\# of Deals 176

1) Overview | 2) Deal Breakdown | 3) Capital Flow | 4) League Table | 5) Deal List | 6) Buyer List | 7) Time Series

# Unique Buyers	176	Financial Buyers	23	Strategic Buyers	153
Deal Count	174	Deal Count	24	Deal Count	155
Total Deal Value	61.6B	Total Deal Value	18.6B	Total Deal Value	52.7B
Average Deal Value	1.8B	Average Deal Value	2.3B	Average Deal Value	1.8B
Average Premium	28.9%	Average Premium	14.1%	Average Premium	28.9%

	Buyer Name	T	Industry	Count↓	Tot Value	Disclosed Deal Size Average	Low	Range	High
11)	Microsoft Corp	S	Applications Software	4					
12)	Vista Equity Partners LLC	S	Invest Mgmnt/Advis Serv	3	864.0M	432.0M	14.0M		850.0M
13)	Battery Ventures LP	F	Venture Capital	2					
14)	DataRobot Inc	S	E-Commerce/Services	2					
15)	Barracuda Networks Inc	S	Internet Infrastr Sftwr	2					
16)	General Electric Co	S	Diversified Manufact Op	2					

Completed, Software-Based, Data-Processing, Technology Firm Acquisitions in the United States Over the Trailing Twelve Months:

1) Overview | 2) Deal Breakdown | 3) Capital Flow | 4) League Table | 5) Deal List | 6) Buyer List | 7) Time Series — # of Deals 23

# Unique Buyers	22	Financial Buyers	2	Strategic Buyers	20
Deal Count	22	Deal Count	2	Deal Count	20
Total Deal Value	393.2M	Total Deal Value	--	Total Deal Value	393.2M
Average Deal Value	196.6M	Average Deal Value	--	Average Deal Value	196.6M
Average Premium	41.5%	Average Premium	--	Average Premium	41.5%

	Buyer Name	T	Industry	Count	Tot Value	Disclosed Deal Size Average	Low	Range	High
11)	Access Information Manageme...	S	Consulting Services	1					
12)	Bow River Capital Partners LLC	F	Private Equity	1					
13)	Hotel Effectiveness Solutions ...	S	Applications Software	1					
14)	Epicor Software Corp	S	Enterprise Software/Se...	1					
15)	Trax Technology Solutions Pte...	S	Applications Software	1					
16)	Formstack LLC	S	Computer Software	1					
17)	Microsoft Corp	S	Applications Software	1					

Appendix 5.c.: BOP Model Calculations Walkthrough

First we list our given values:
Risk Free Rate = r = 1.480% or .01480
Strike Price (Current Stock Value) = S = $144.92

Next we calculated our up and down assumption values:
Percentage that the stock will increase in an Up Movement (AYX is acquired by SwC)
U = (60% weight) * (12 month historical premium) + (40% weight) * (5 year historical premium)
U = (.6)(.415) + (.4)(.289) = .249 + .1156 = .3646, or 36.46%
Percentage that the stock will drop by in a Down Movement (AYX is not acquired over the next 12 months)
D = 0.00, or 0.00%

Next we calculated the multiplication factors (in relation to S) for the scenarios:
u = 1 + U = .3646 + 1 = 1.3646
d = 1 - D = 1 - 0 = 1

We then computed the two possible values of the stock:
S^+ = S x u = 144.92 x 1.3646 = $197.76
S^- = S x d = 144.92 x 1 = $144.92

Then we calculated the intrinsic value of the call option at expiration in either scenario:
c^+ = Max(0,S^+ - X) = Max(0, 197.758 - 144.92) = Max(0,52.838) = $52.84
c^- = Max(0,S^- - X) = Max(0, 144.92 - 144.92) = Max(0,0) = $0

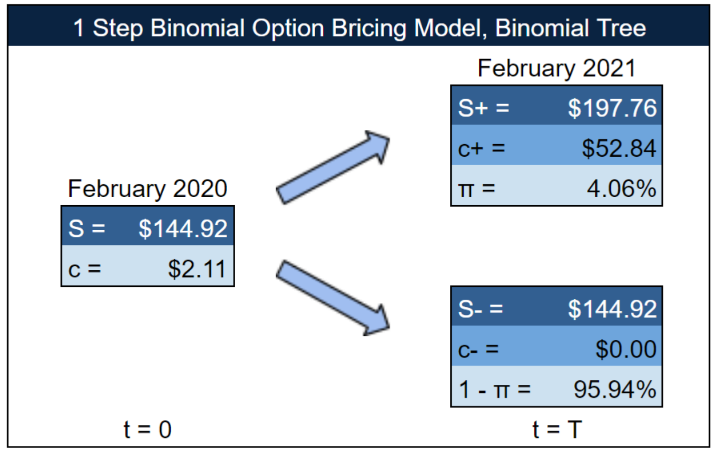
Next we compute the risk-neutral probabilities:
π = (1 + r_f - d) / (u - d) = (1 + .01480 - 1) / (1.3646 - 1) = .0436, or 4.06%
1 - π = 1 - .0436 = .9564, or 95.94%

Next we can calculate the value of the ‘call option’ today as:
c = [(c^+ x π) + (c^- x (1 - π))] / (1 + r_f) = [(52.84 x .0406) + (0 x .9594)] / 1.01480 = $2.11

Appendix 5.d.: Binomial Option Pricing Model

The model (following page) and formulas used are based on those found in *WIley Study Guide for 2017 Level I CFA Exam,* “Volume 5: Fixed Income, Derivatives, & Affirmative Investments,” page 206. It assumes a risk-neutral and arbitrage-free environment.

1 Step Binomial Option Pricing Model	
Inputs and Assumptions to Model	
Current Value of Stock	$144.92
Riskless Rate, 10 year T-Bond Yield	1.480%
Dividend Yield	0%
Number of Periods Each Year =	1
Up Movement in Binomial =	36.46%
Down Movement in Binomial =	0.0%
Calculated Values	
Multiplication Factor of Up Movement	1.36
Multiplication Factor of Down Movement	1.00
Upside Value of Stock	$197.76
Downside Value of Stock	$144.92
Intrinsic Value of 'Call Option' at Upside Expiration	$52.84
Intrinsic Value of 'Call Option' at Downside Expirat	$0.00
Risk-Neutral Probability of Up Movement	4.06%
Risk Neutral Probability of Down Movement	95.94%
Model Output(s)	
Present Value of 'call option'	$2.11

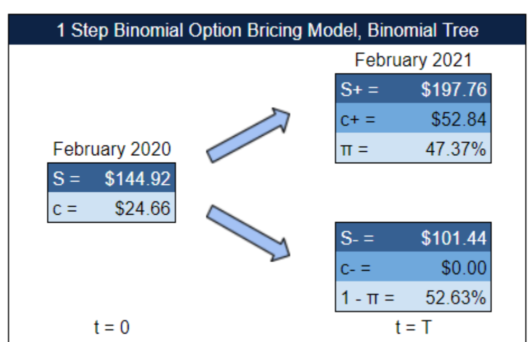


Appendix 5.e.: An Extended Note on the BOP Model

Traditionally the binomial option pricing model deals with a downside that incorporates a negative movement in the stock price. However, we wanted to isolate the scenario of AYX being acquired or not, and thus used a 0% down movement. If we were to conduct a more traditional Binomial Option Pricing model, then we would have used a 30% downside.

This value would have been derived from the expected negative impact the stock might receive if a major competitor released a product that directly attacks AYX's niche. We believe this to be the most likely and most impactful negative event. If AYX is as unique as it claims to be, and addresses a truly niche market, then eventual competition is nearly inevitable, especially from the perspective of a large technology firm. Tech companies such as Amazon are already partnered with AYX, meaning that they are fully aware of the company, product, and potential market. And with their relatively massive reserves of cash and short-term investments, it would be a menial task to divert funds to develop a competing product or poach lead developers, should the financial gain be significant and possible. In order to obtain this exact value of a downside, we analyzed a comparable event that was experienced by Teledoc (TDOC). This company is a subscription-based technology and healthcare company that allows its users to access healthcare services electronically--including digital doctor visits/calls/video-chats. It pioneered the telehealth industry. But after trading hours on September 28, 2018, Amazon (AZO) announced that it would be releasing Amazon Care, a service that is strikingly similar to that which Teladoc provides. Although it was to be released internally, strictly to Amazon's workforce, AZO often pilots programs in this way before launching them to the public. Teladoc's stock price fell 27.70 % over the coming days as a result of the news. We, as analysts, see this case study as highly comparable to one which AYX might experience. And to account for the fact that it was an internal release, rather than a public one (though many investors treated it as such), we have slightly exaggerated this drop value to 30.00%. Prior to the event, TDOC existed in a very similar environment that AYX is currently experiencing. It had a market cap between five and ten billion dollars; utilized a subscription-based technology; was experiencing high growth in revenue, users, and stock price (the stock was up 45% year-to-date for the nine months prior to the event); went public less than two years earlier than AYX (meaning it 'grew up in' the same bull market conditions); addressed a niche market; and existed in a setting where a large entrant faced relatively low barriers-of entry. Shown here:

1 Step Binomial Option Pricing Model	
Inputs and Assumptions to Model	
Current Value of Stock	$144.92
Riskless Rate, 10 year T-Bond Yield	1.480%
Dividend Yield	0%
Number of Periods Each Year =	1
Up Movement in Binomial =	36.46%
Down Movement in Binomial =	30.0%
Calculated Values	
Multiplication Factor of Up Movement	1.36
Multiplication Factor of Down Movement	0.70
Upside Value of Stock	$197.76
Downside Value of Stock	$101.44
Intrinsic Value of 'Call Option' at Upside Expiration	$52.84
Intrinsic Value of 'Call Option' at Downside Expirat	$0.00
Risk-Neutral Probability of Up Movement	47.37%
Risk Neutral Probability of Down Movement	52.63%
Model Output(s)	
Present Value of 'call option'	$24.66



Source: team analysis

Appendix 6: Economic Analysis

Appendix 6.a.: Economic Analysis

To better understand AYX's economic environment and operating conditions, the following information serves as an analysis for the United States (U.S.) and global economy, focusing on AYX's business operations' substantial exposure to several major economies. Our team saw value in analyzing the U.S. and global economy since approximately 70% of AYX's revenue is based domestically and the remaining 30% based internationally.

Appendix 6.b.: Domestic Economic Analysis

For the years leading up to and during the 2017 tax cuts, U.S. GDP growth has been strong. More recent data however, displays a slowing trend in U.S. GDP growth. We find this slowing in growth consistent with the normalization of the tax cut benefits, persisting geo-political issues (including the U.S.-China trade war), aging populus, and overall low population growth. These signs lead us to believe that the U.S. is in a decelerating growth environment and in the late stage of the business cycle. AYX's revenues are very cyclical and may be adversely affected by a further slowdown in global growth.

Employment has been the strongest it has been with unemployment reaching historical lows in the past 50 years. Yet, data shows a weakening in momentum of job-creation growth, adding to our forecasted slowdown. This trend is reflected in U.S. hourly wage growth, consumer spending growth, and retail sales growth. These historical low unemployment levels have great implications for AYX since recruitment of highly skilled talent is scarce, very competitive, and difficult to retain. The current spread between the 10-year and two-year U.S. Treasuries remain close with recent yield curve inversions occurring within the last year. Yield inversions are correlated with upcoming recessions, typically a year out from the yield inversion. However, the FED's precautionary action of lowering interest rates have made this a short-lived and minor event. Although the recent yield inversions will put some pressure on the future economy, we believe it is not sufficient to forecast an upcoming recession. The Consumer Price Index (CPI) currently ranges between 1.5% to 2% which is consistent with our slowdown prediction. The Non-Manufacturing Price Manager's Index (PMI) remains above 50, meaning the services sector (representing approximately 79.6% of the U.S. economy) is still experiencing some degree of growth.

Overall, we expect the U.S. economy to slow down in the coming years due to a slowing job market, pressure from major geo-political factors, and loss of growth momentum. As a result, we expect the U.S. economy to grow .25% to .5% below consensus and interest rates to remain or slightly decrease to fend off any major economic concerns of a slowdown or fears of recession.

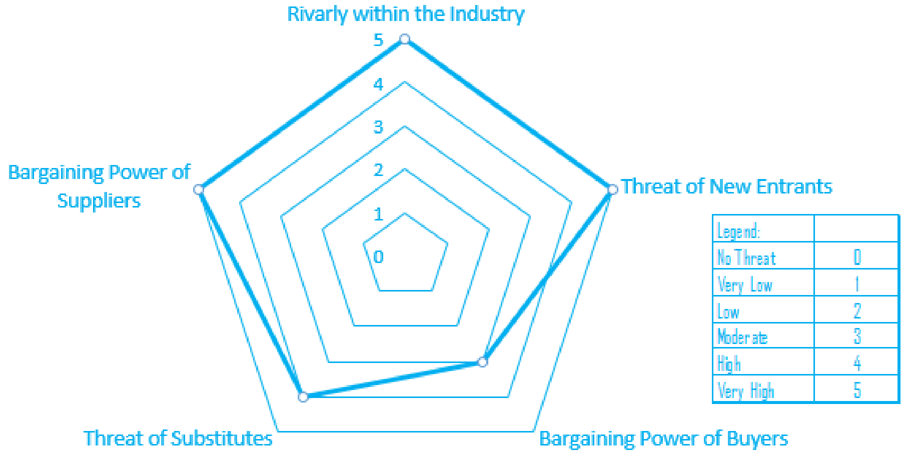
Appendix 6.c.: International Economic Analysis

AYX seeks to grow internationally and compete with global data analytics firms such as SAP SE, a major German company that is among one the largest players in the international software market. The European Union's (EU) economy will be marked with slowing growth in the coming years. With possible short-term recessions on the horizon, E.U. real GDP has been consistent around 2% for the last four decades. We believe this trend will continue on a country-by country basis caused by BREXIT and an overall slowing global economy. The E.U. will experience an average real GDP growth of 1.3% over the next three years (World Bank). This is derived from the European Commission's recent forecast for the E.U. in which they cut their projection from 1.9% to 1.3%. A key driver of our forecast is BREXIT which took place on January 31st, 2020. The United Kingdom has departed from the E.U. and now enters a transition period. This will cause trade complications and disruptions, along with political standoffs, that will lead to inefficient international trading. This will impact the E.U. as production and trade are large drivers of its GDP. The E.U. economy is further clarified when we analyze its Manufacturing and Non-manufacturing PMIs, retail sales, and exports.

China will continue on its decelerating growth, which is in line with the consensus view. This view is further bolstered by the recent coronavirus outbreak. A combination of increased trade tensions and tariffs brought about by the trade war between the U.S. and slowing population growth supports a decelerating economy in China. Other major asian economies such as India and Japan appear to be slowing. India has had consistent growth since 2014. However, consensus is that an economic slowdown will occur in 2020. This is in line with a slowing U.S. and global economy. Additionally, rising inflation & unemployment rates, a credit-squeeze from non-bank financial companies, ban of certain cash notes, decrease in foreign investment and high bank deposit rates have also contributed to the slowdown. India's decline in manufacturing growth, lacking infrastructure and resources also hinders its overall GDP growth potential. However, the U.S.-China trade war may open the door to international trade deals with India as countries seek to decrease their dependence on China, possibly growing its economy. Lastly, the Indian government has also taken steps to mitigate its slowing economy by implementing several savings strategies and interest rate cuts. Japan is expected to experience continued low, steady growth in the coming years. This is reflected in its PMIs loss of momentum. This is projected in an environment with nearly full employment and at or below zero interest rates. However, we project a slightly greater slowdown, due to slowing global economic growth as a result of the U.S.-China trade war. We do not expect much change in inflation as we expect it to remain slightly above current levels due to a large national debt and aging population. These factors are indicative of a sharp decline in retail sales and a slowdown in exports over the past year.

In summation, the Asian economies will experience an economic slowdown in the coming years at the hands of rising geo-political conflicts and a slowing global economy.

Appendix 7: Porter's Five Forces



Source: Team Analysis

Bargaining power of Buyers: (Low to Moderate) - Virtually all businesses from every sector of the economy use software to increase productivity and efficiency. AYX operates in many industries ranging from healthcare to consumer packaged goods. Firms have embraced data analytics as a way to get a competitive advantage. Therefore, it is no surprise that demand from the business segment makes up 63.9% of the total market, according to IBISWorld. Business demand and software investment is negatively correlated with corporate profits. As corporate profit increases, businesses are more inclined to invest in new software or update dated versions. However, during economic downturns or periods of low performance, firms are much more hesitant on making investments in computer technology such as software. High switching costs can force a business to stay with a particular software provider. Retraining employees is the one of the biggest costs when adopting new software programs. The opportunity costs increase further if a firm is required to invest more into new equipment or change an existing business process.

Bargaining power of Suppliers: (High) - In essence, the key suppliers to the software publishing industry are highly skilled workers. Due to the lack of talent, highly skilled workers find themselves in a better position to negotiate their pay and perks. Retaining talent is competitive. Larger companies with more resources at their disposal can offer better pay, perks, and amenities. This makes it difficult for new start-ups and small companies to retain talent.

Threat of Substitutes: (Moderate to High) - Key threats like cloud computing and open-source software present alternatives with which traditional software publishing companies must compete against. Cloud computing is a direct threat to companies providing productivity software since it is readily accessible via an internet browser and less capital intensive. Open-source software programs are more common among individuals users rather than businesses. It is often a less expensive or free option compared to software offered by Microsoft or Apple. With open-source software, programmers are able to contribute to making new and free software programs. Open-source software can be more easily updated and often is more standards-compliant. Piracy has become an even larger threat to the industry since the introduction of peer-to-peer file-sharing networks. Individual consumers are more prone than businesses to pirated versions of software programs. This is because the individual consumer is more sensitive to high prices. This presents a problem for revenue growth. However, companies can become more resistant to software piracy by utilizing online distribution models or a subscription-based pricing model.

Threat of New Entrants: (High) – The Software Publishing industry has a low capital intensity which means that most software companies only need a limited amount of capital goods such as computers or office space to start. Instead, the Software Publishing industry is known for its high labor intensity. For example, software companies only spend about $0.04 on capital investments for every 1.00 spent on labor, according to IBISWorld. This means software companies rely on highly skilled, trained talent from top universities. According to IBISWorld, the number of industry operators is expected to rise at an annualized rate of 6.1% through 2024 to 14,290 companies.

Rivalry within the industry: (High) - Competition is high within the software publishing industry. Although, patents on intellectual property are used to limit competition from new entrants and existing competitors. As a result, it is difficult to gain market share in this highly competitive market that is primarily controlled by giant firms like Microsoft Corporation (MSFT). Firms also compete for the scarce number of highly skilled programmers. This essential but limiting factor causes high labor costs for software companies through very high wages or stock-based compensation plans. Rivalry between firms is bolstered by heavy mergers and acquisitions activity. Large firms like Microsoft have aggressively targeted innovative or niche start-ups or small firms. Firms with enormous cash on hand can make strategic acquisitions of smaller firms with valuable intellectual property or innovative products as a way to diversify their own software portfolio or drive innovation. Acquiring smaller, relatively inexpensive firms can also increase the number of competitors in key markets. This occurs because many new entrants want to build a reputable firm in order to ultimately sell to larger firms.

Appendix 8: Peer Group Detail

Company	Correlation	Intercept	P Value
Alteryx	1	1	0
Anaplan Inc	0.6692292021	0.9720115338	0.008856074825
Dynatrace Inc	0.9357409205	0.8848465301	0.01936442642
PROS Holdings Inc	0.4995338452	0.7607187133	0.005960068125
Smartsheet Inc	0.7228583374	0.659799276	0.0003174393201
Hubspot Inc	0.4939434592	0.6524892977	0.01742640469
athenahealth Inc	0.5355973031	0.5770547248	0.008440582051
MongoDB Inc	0.5618114509	0.541635592	0.002819729648
Proofpoint Inc	0.3171499899	0.492431758	0.07211554752
RealPage Inc	0.3927014348	0.4831076037	0.1157628275
Elastic NV	0.3846136493	0.430270835	0.1745108606
Avalara Inc	0.3680073148	0.4053468078	0.1329559823
SolarWinds Corp	0.2006022109	0.3248526497	0.4916753459
Domo Inc	0.4757466222	0.3161699723	0.04597939139
Coupa Software Inc	0.5272648496	0.2934229542	0.2160776208
MicroStrategy Inc	0.2144348804	0.2843398406	0.3130138544
Benefitfocus Inc	0.3508347366	0.2770528275	0.06338229718
Medidata Solutions	0.1760794259	0.2727294765	0.3534413898
Mulesoft Inc	0.363630032	0.2644390258	0.2166220134
Guidewire Software Inc	0.2767974583	0.2310445892	0.5495537599
Splunk Inc	0.389281621	0.1654480648	0.5301114735
SVMK Inc	0.1643875565	0.1564563067	0.5582501437
Pivotal Software Inc	0.1113401302	0.07586827606	0.6402677003
Pegasystems Inc	0.2934297618	0.06407111431	0.8132006651
Cloudera Inc	0.086603183	0.06169894776	0.6374282447
Dropbox Inc	0.03472499486	0.04818221079	0.8812140699
Nuance Communications Inc	0.1059445823	0.03634287891	0.8987476254
Nutanix Inc	0.2547712803	0.03205317533	0.7905228795
LiveRamp Holdings Inc	0.1265791731	0.005692245354	0.9761279259
SPS Commerce Inc	0.2538283718	-0.002101963335	0.9938702108
Manhattan Associates Inc	0.3459405821	-0.06544107466	0.816807426
CDK Global Inc	-0.1312842474	-0.08897478898	0.7963812429
Paylocity Holding Corp	0.474868256	-0.09950660191	0.7119971239
New Relic Inc	0.005111506008	-0.3323701763	0.08194472952
j2 Global Inc	-0.08037170657	-1.240493107	0.009662991615

Source: Bloomberg and Team Estimates

Peer group was determined based on looking at the comparing the returns and regression of returns against AYX of companies within the data analytics industry. We primarily looked at companies with an intercept and correlation approaching 1 as well as a lower P-Value to determine significance of results.

Appendix 9: Board of Directors

Dean A. Stoecker - Chairman since 1997

- Chairman and CEO of Alteryx
- Co-founded Alteryx in 1997
- Led ALteryx to eight consecutive quaters of more than 45% YoY growth for two consective years
- Recognized as an Outstanidng Public Company CEO by OCTANE
- EY Entrepreneur Of The Year® 2017 Award in the OC Region
- Earned his MBA from Pepperdine University and his undergraduate degree in international business from the University of Colorado, Boulder

Charles R. Cory"Chuck" - Lead Director since 02/2017

- Served as Chairman of Global Technology Banking at Morgan Stanley from 2005 to 2015
- Resposible for Morgan Stanley's technlogy M&A from 1996 to 2005
- Advised on more than 300 succesful transctions aggregating over $500 billion
- Serves on the board of directors of Essence Group Holdings Corp, parent of Lumeris, Inc.
- Director of ezCater
- Serves on the advisory boards of Moonlighting LLC and Tufton Venture Partners, LP

Kimberly E. Alexy - Board Member since 03/2017

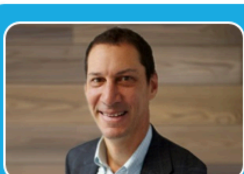
- Principal at Alexy Capital Management
- Seasoned financial services professional with more than 20 years of experience in capital markets, corporate finance, and investments
- Was a sell-side equity research analyst on Wall Street for nearly a decade, specializing in technology stocks
- Served as an acive board memeber at multile publicly traded and private companies and chaired various committees over the pst decade
- Principal at Alexy Capital Managemnt, a private investment fund she founded in 2005

Mark F. Anderson - Board Member since 10/2018

- Former President, Palo Alto Networks
- Seasoned executive with a proven track record of rapidly building and scaling organizations for growth and profitability
- Chief growth officer of Anaplan and former president of Palo Alto Networks
- Led worldwide sales activities at F5 Networks and was instrumental in the GTM success and growth to dominate the Application Delivery Controller marketplace
- Holds a B.A. in business and economics from York University in Toronto

John Bellizzi - Board Member since 03/2011

- Senior Vice President, Thomson Reuters Professional Division
- Early investor in Alteryx
- Former Senior Vice President, Business Operations for Thomson Learning
- Former Vice President and CFO of Manning, Selvage & Lee
- Held senior-level positions at Thomson Financial, Thomson Learning International, Eli Lilly & Co., Paramoount Publishing, Inc., and Pepsi-Cola International



Jeffrey L. Horing "Jeff" - Board Member since 09/2014

- Managing Director, Insight Venture Partners
- Co-founder and Managing Director at Insight Venture Partners since 1995
- Led the Series B funding for Alteryx
- Led Insight to become a premier venture capital and private equity firm
- Areas of focus include ata, analytics, mobile, and infrastructure, and SaaS software in Europe and North America

Timothy I. Maudlin "Tim" - Board Member since 04/2016

- Lead Board Member, WEB.com
- Strong web and ecommerce background
- Serves on the boards of Drilling Info, Inc.; Pluralsight, LLC,; Ministry Brands, LLC
- Previously served on the baord of ExactTarget, Inc.; MediaMind Technologies, Inc.; Frontline Technologies; and eVestment Alliance
- Former managing partner of Medical Innovation Partners and President of its managment company
- Graduated with a Master's in Managment from the Kellogg School of Northwestern University

Eileen M. Schloss - Board Member since 05/2017

- Former executive Vice President, Medidata Solutions, Inc.
- Veteran executive who has worked for more than 20 years as a human resource professional to help mentor and guide HR strategy and operations
- Held executive human resources roles at organizations including both global brands in the Fortune 500, including high-growth businesses needing to scale
- Worked with many boards and committees on executive compensation and human capital elements

Appendix 10: Executives / Management

Dean A. Stoecker - Chief Executive Officer

- Co-founded Alteryx in 1997
- Recognized as an Outstanidng Public Company CEO by OCTANE
- EY Entrepreneur Of The Year® 2017 Award in the OC Region

Olivia Duane-Adams "Libby" - Chief Customer Officer and Co-Founder

- Spearheads the growth of the Alteryx Community as an engaging platform online as well as offline, with support for local and topic-focused user groups
- Launced what is known today as the Alteryx Inspire user conference and introduced the Alteryx ACE program

Robert Scott Jones - President and Chief Revenue Officer

- Responsible for global growth of the sales and professional services teams
- 25-year track record of rapid, high-impact success in both startups and market-leading companies

Kevin Rubin - Chief Financial Officer

- Responsible for all financial management activities including finance and analysis, accounting, tax, treasury, and business applications
- Brings 20 years of experience in the industry, leading both public and private technology companies through rapid growth and expansion

Derek Knudsen - Chief Ttechnology Officer

- Responsible for all technology and technology initiatives, and leads both the Engineering and IT teams
- Brings more than 20 years of experience helping companies leverage technology for strategic advantage, as well as leading technology organizations as they scale for growth

Sharmila Shahani-Mulligan - Chief Strategy Officer

- Responsible for the company's Silicon Valley operations, strategic planning, technology partnerships and more
- Joined Alteryx in the company's acquisition of ClearStory Data, a modern data analytics company enabling automated business insights from disparate data, where she served as CEO

Christopher M. Lal "Chris" - Chief Legal Officer

- Brings significant corporate, transactional, and business experience to oversee all legal affairs for Alteryx as it continues its growth as a leader in self-service data analytics
- Has 18 years of experience as a corporate, transactions, and securities attorney representing both public and private companies in various phases of development and growth

Alan Jacobson - Chief Data and Analytics Officer

- Responsible for data management and governance, product and internal data, and use of the Alteryx Platform to drive continued growth
- Recognized as a top leader in the global automotive industry as an Automotive Hall of Fame Leadership & Excellence award winner and an Outstanding Engineer of the Year by the Engineering Society of Detroit

Amy Heidersbach - Chief Marketing + Community Officer

- Responsible for evolving the company's global go-to-market (GTM) strategy to help business leaders leverage analytics to drive digital transformation
- Amy was the CMO of CareerBuilder and held various leadership roles at Capital One, PayPal and Visa

Scott J. Davidson - Chief Operating Officer

- Responsible for building out the infrastructure that enables global scale and efficiency, including Corporate Development, Information Technology, Enterprise Applications and Human Resources
- Brings 20 years of senior operational and financial leadership experience to Alteryx

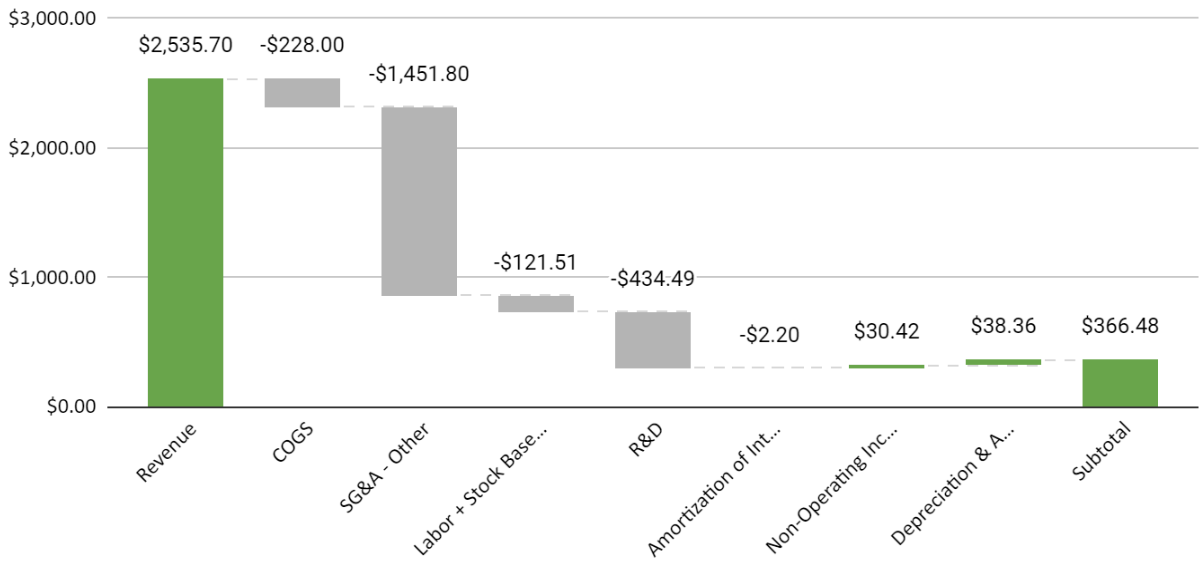
Chad Bennett - Senior Vice President, Human Resources

- Responsible for developing a global human capital strategy that fuels the fast-paced expansion and empowering culture at Alteryx
- During his tenure, Alteryx was named by Orange County Business Journal as one of the 2016 and 2017 Best Places to Work in Orange County

Ashley Kramer - Senior Vice President, Product Managment

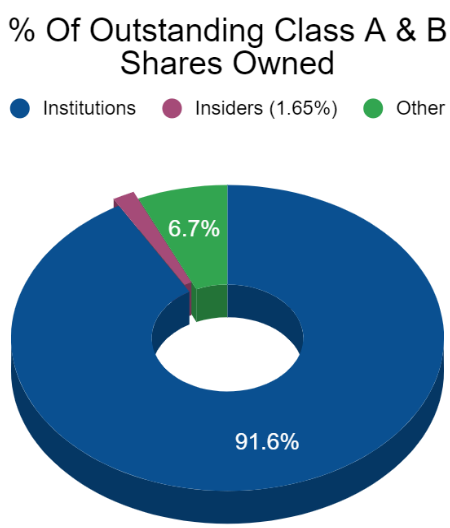
- Responsible for the product roadmap and leads the team responsible for product innovation at Alteryx
- Seasoned leader in hypergrowth technology companies

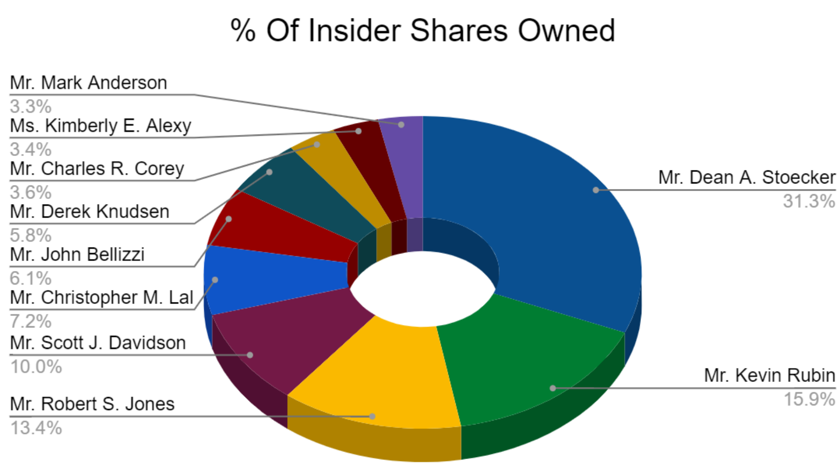
Appendix 11: 2018 EBITDA Waterfall



Source: Company 2018 10-k

Appendix 12: Stock Ownership Graphs





Source: Company 2019 10-K

Appendix 13: Employee Benefits

- 100% company-paid medical, dental, and vision for associates
- Health plans that cover your family and pets
- Company matched 401(k)
- Associate stock purchase plan
- Paid time off: 3 weeks vacation, 5 sick days, 9 holidays, 3 floating holidays, and 20 hours volunteer time
- 100% paid parental leave
- Tuition reimbursement
- Wellness programs with up to $300 fitness reimbursement annually
- Collaborative offices stocked with healthy snacks and drinks
- Office events, catered lunches, and happy hours

Source: Alteryx, Inc. Company Website