MEMORANDUM

TO:	VALUATION COMMITTEE
FROM:	ABC
SUBJECT:	XYZ, LLC 06/30/2018 VALUATION
DATE:	08/21/2018

Investment

XYZ holds a XX% interest in ABC Class A Units.

XYZ (or "the Company") owns XX% of XYZ which owns XX% of XYZ, which is the operating entity.

The valuation exercise is directed at determining the value of the securities held by ABC.

Details of Inputs by FASB 157 Level

Input	FASB 157 Level
Discounted Cash Flow Analysis	3
Comparable Company Trading Analysis	2
Comparable Company Transaction Analysis	2

The discounted cash flow ("DCF") analysis is considered FAS157 Input Level 3 because it is unobservable for the investment. The DCF methodology reflects our own assumptions regarding the assumptions market participants would use in pricing the investment. By contrast, the comparable company analyses used, both trading and transaction, are considered FAS157 Input Level 2 as these valuation methodologies are based on observable market values. The overall valuation is determined using a weighted average of the DCF analysis and the comparable company analyses; therefore the overall FAS157 Input Level is 3.

Overview

In determining the value of ABC's ownership of XYZ, a comprehensive valuation analysis was performed. The valuation analysis includes:

- Discounted cash flow analysis;
- Comparable company trading analysis; and
- Comparable company transaction analysis

The valuation methodologies, explained in further detail below, produce equity values ranging from $XXM (using the comparable company trading analysis) to $XXM (using the discounted cash flow analysis). The equity values resulting from each respective valuation methodology are then weighted according to the current perceived relative validity of each analysis. The DCF analysis is afforded a XX% weighting among the three valuation analyses, as it is believed that this analysis most accurately captures the Company's value and long-term profitability potential. Two different comparable company valuation analyses are also employed, the comparable company trading analysis (assigned XX% weighting) and the comparable company transaction analysis (assigned XX% weighting). The comparable company trading analysis consists of comparable public companies in industries relevant to XYZ which have similar product categories, end-markets, distribution channels, growth rates and/or comparable fundamentals driving these businesses. The comparable company transaction analysis consists of acquisitions that are relevant to XYZ based on the same set of criteria used in the comparable company trading analysis. The companies in either comparable company analysis are only somewhat comparable to XYZ due to difference in size, product mix and distribution channel mix. As such, the comparable company analyses are individually given less weighting than the DCF analysis.

The overall valuation analysis produces a total equity value of $XXM, implying a $XXM unrealized valuation of ABC's investment as of June 30, 2018. Based on our analysis, we have decided to write-down the current unrealized value of our investment by $XXM from $XXM as of March 31, 2018 (and December 31, 2017) to $XXM as of June 30, 2018.

($ in millions)

		As of 6/30/2018
Equity Value	Weighting	
Discounted Cash Flow Analysis	xx%	XX
Comparable Company Trading Analysis	xx%	XX
Comparable Company Transaction Analysis	xx%	XX
Average Equity Value		**$XX**
Less: Class A Cost		(XX)
Less: Class A Accretion		(XX)
Less: Class B Repurchase Units		(XX)
Common Equity Value		**$XX**
ABC Controlled Entity Unrealized Valuation		
ABC		$XX
Other ABC Investors		XX
Total ABC Controlled Entity Unrealized Valuation		**$XX**
ABC Valuation	% Ownership	
Class A Cost and Accreted Value	xx%	$XX
Common Value	xx%	XX
ABC Unrealized Equity Value		**$XX**
ABC Realized Proceeds		XX
Total ABC Valuation		**$XX**
Invested Capital		$XX
ROI		XX
IRR		XX%
Appendix - Enterprise Value Calculation		
Average Equity Value		$XX
Plus: Avg. Net Debt Net Debt		XX
Implied Enterprise Value		**$XX**
EV / LTM EBITDA		***XX***
LTM EBITDA (1)		$XX

(1) 6/30/18 LTM EBITDA pro forma for cost savings add backs.

Discounted Cash Flow Analysis

The projections assume compounded revenue growth of XX% from 2017 to 2022.

Key Projections Assumptions	2018	2019	2020	2021	2022
Revenue % Growth	xx%	xx%	xx%	xx%	xx%
EBITDA % Margin	xx%	xx%	xx%	xx%	xx%
Other					
NOL Cash Tax Savings	xx	xx	xx	xx	xx
NWC (% of Revenue)	xx%	xx%	xx%	xx%	xx%
Capex (% of Revenue)	xx%	xx%	xx%	xx%	xx%
Amortization % of Revenue	xx%	xx%	xx%	xx%	xx%

We believe that driving working capital projections as a consistent percentage of revenue is a reasonable approach going forward.

A terminal value EBITDA multiple of XX has been used in the DCF analysis. While the mean and median EBITDA acquisition multiples of precedent transactions are XX and XX, respectively, we have used XX as what we believe it to be an appropriate estimate of the applicable exit multiple in 20XX. The chosen terminal value EBITDA multiple implies a perpetuity growth rate of XX% which is lower than the final year revenue growth assumption in the projections of XX%. The terminal value of XX also represents a multiple lower than the XX multiple for which the business was acquired in 20XX and represents a lower multiple than the current mean (ex. high and low) of selected public comparable companies' trading multiples of XX. This results in 20XX terminal value of $XXM. The cash flows and the terminal value are discounted back (using mid-year and end-of-year conventions, respectively) with a WACC of XX%. The WACC is calculated using estimated costs of equity and debt, which is explained in more detail below, after the DCF calculation.

The DCF analysis, including the WACC calculation, incorporate changes to federal tax rates and regulations resulting from the 2018 tax reconciliation act. A XX% blended tax rate is used for combined federal and state purposes. Additionally, depreciation expense use in computing taxable income includes changes in bonus depreciation provided for in the act.

Based on these assumptions, the implied enterprise value from the DCF analysis is $XXM, and the implied equity value is $XXM.

Please refer to the attached ABC prepared XYZ 2018 MDA and Q2 2018 Portfolio Review documents for a further review of Q2 2018 performance and the 2018 plan.

($ in millions)

	Actual					Budget	BOY	Projected			
	2013 [1]	2014 [1]	2015 [1]	2016 [1]	2017 [1]	2018B	2018	2019	2020	2021	2022
Revenue											
XYZ	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX
Services	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
Total Revenue	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX
% Growth	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*
Adjusted EBITDA											
XYZ	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX
Services	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
Adjusted EBITDA	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX
% Margin	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*
Cash Addbacks	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)
Amortization	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)	(XX)
% of Revenue	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*
Total Capex						(XX)	(XX)	(XX)	(XX)	(XX)	(XX)
% of Revenue						*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*
Taxable EBIT	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX	$XX
% Margin	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*	*xx%*
Income Taxes						(XX)	(XX)	(XX)	(XX)	(XX)	(XX)
After-Tax EBIT						$XX	$XX	$XX	$XX	$XX	$XX
Amortization						XX	XX	XX	XX	XX	XX
Operating Cash Flow						$XX	$XX	$XX	$XX	$XX	$XX
NOL Cash Tax Savings						XX	XX	XX	XX	XX	XX
Working Capital Requirements						XX	XX	XX	XX	XX	XX
Unlevered Free Cash Flow						$XX	$XX	$XX	$XX	$XX	$XX

XX%	

NOL Bal.	Ann. Limit
$XX	$XX

Terminal Value Calculation

EBITDA in 2022	$XX
Terminal Value Multiple	XX
Terminal Value at 2022	$XX
Implied Perpetuity Growth Rate	*xx%*

Terminal Value Multiple Comparison

	DCF	Acquisition Multiple		Comparable	Precedent Transactions	
	Terminal	Adjusted [2]	PF [3]	Companies	Mean	Median
Multiple	XX	xx	xx	xx	xx	xx
Variance to DCF Terminal Value Multiple		*xx%*	*xx%*	*xx%*	*xx%*	*xx%*
WACC		xx%	xx%	xx%	xx%	xx%
Mid-Year Convention		XX	XX	XX	XX	XX
End-of-Year Convention		XX	XX	XX	XX	XX
PV of Cash Flows		$XX	$XX	$XX	$XX	$XX

Total Enterprise Value	**$XX**
Less: Net Debt	(XX)
Implied Equity Value	**$XX**

[1] Results shown for reference purposes only.

[2] Multiple calculated based on actual adjusted EBITDA through Dec-14.

[3] Multiple calculated based on expected pro forma run rate EBITDA, including the estimated full-year impact of the XXX acquisition and freight, paper and printing savings.

To calculate a WACC for XYZ, a cost of equity first needs to be estimated. This is done based on the equity betas of selected comparable public companies. The equity betas are unlevered, then relevered according to the mean capital structure of the comparable companies, to produce an average beta of XX. The capital asset pricing model ("CAPM") is then employed to arrive at an estimated cost of equity based on that beta. Due to XYZ's size, a small company risk premium of XX% (source: XXX) is also included, arriving at an implied cost of equity of XX%. All of the assumptions and calculations for the estimated cost of equity are detailed below.

Assumptions

Risk-Free Rate (R_F) [1]	xx%
Equity Risk Premium (R_M - R_F)	xx%
Small Company Risk Premium [2]	xx%
Tax Rate (T_R)	xx%

($ in millions)

	Ticker	Equity Beta	Equity Value	Cost of Debt	Total Debt	Marginal Tax Rate	Unlevered Beta [3]	Relevered Beta [4]
XXX	Nasdaq: XXX	XX	XX	xx%	XX	xx%	XX	XX
XXX	Nasdaq: XXX	XX	XX	xx%	XX	xx%	XX	XX
XXX	Nasdaq: XXX	XX	XX	xx%	XX	xx%	XX	XX
XXX	NYSE:XXX	XX	XX	xx%	XX	xx%	XX	XX
XXX	NYSE:XXX	XX	XX	xx%	XX	xx%	XX	XX
XXX	NYSE:XXX	XX	XX	xx%	XX	xx%	XX	XX
Average		**XX**	**$XX**	**xx%**	**$XX**	**xx%**	**XX**	**XX**

Cost of Equity [5]

Average Levered Beta	XX
K_E	xx%

(1) XX-Year U.S. Treasury, as of 6/29/18

(2) Source: "XXX", page X.

(3) Unlevered Beta = b_L / (1 + (D * (1 - T_R)) / E).

(4) Levered Beta = b_U * (1 + (D * (1 - T_R)) / E).

(5) $K_E = R_f + b_L$ * MRP + SCRP.

The average after-tax cost of debt of selected comparable companies is calculated, arriving at XX%. The Cost of Equity Capital and Cost of Debt Capital are then weighted according to the mean capital structure of the comparable companies to arrive at a WACC of XX%, as illustrated in the table below.

WACC Calculation

Cost of Equity Capital	xx%
Cost of Debt Capital	xx%
Market Weighting of Equity	xx%
Market Weighting of Debt	xx%
Weighted Cost of Equity Capital	xx%
Weighted Cost of Debt Capital	xx%
Weighted Average Cost of Capital [1]	xx%

[1] WACC = [KE * %E] + [KD * (1 - TR) * %D].

Comparable Company Trading Analysis

A group of 6 comparable companies has been compiled for this analysis. The selection criteria are based on similar end-markets and comparable fundamentals driving these businesses. The table below highlights each of the comparable companies' trading multiples as well as their revenue growth and EBITDA margins.

		Enterprise Value /			Revenue Growth		EBITDA Margin		Long Term	
Company Name	Ticker	LTM Revenue	LTM EBITDA	2018E EBITDA	FY 2017	FY 2018	FY 2017	FY 2018	Growth Rate	Relevance
XXX	Nasdaq: XXX	xx	xx	xx	xx%	xx%	xx%	xx%	xx%	XXX
XXX	Nasdaq: XXX	xx	xx	NM	xx%	xx%	xx%	xx%	NM	XXX
XXX	Nasdaq: XXX	xx	xx	xx	xx%	xx%	xx%	xx%	xx%	XXX
XXX	NYSE:XXX	xx	xx	NM	xx%	xx%	xx%	NA	xx%	XXX
XXX	NYSE:XXX	xx	xx	xx	xx%	xx%	xx%	xx%	xx%	XXX
XXX	NYSE:XXX	xx	xx	xx	xx%	xx%	xx%	xx%	NM	XXX
Mean		**XX**	**XX**	**XX**	**xx%**	**xx%**	**xx%**	**xx%**	**xx%**	
Median		**XX**	**XX**	**XX**	**xx%**	**xx%**	**xx%**	**xx%**	**xx%**	
Mean (Ex. High & Low)		**XX**	**XX**	**XX**	**xx%**	**xx%**	**xx%**	**xx%**	**xx%**	

Note: Multiples in excess of 30.0x are considered not material.

Since XYZ is a growth company, utilizing only an LTM EBITDA multiple does not accurately reflect the Company's true value. To more accurately depict XYZ's value, a weighted average of the Company's Forward EBITDA and LTM EBITDA is used. A Forward EBITDA multiple is used because it allows the Company to realize some of the benefits from its investments, and the public companies used in this valuation analysis are more typically valued based on forward valuation metrics. An LTM EBITDA multiple is also included as this is a common metric used in private company valuations. These two valuation multiples are each assigned a XX% weighting in order to achieve what we believe is an appropriate balance between the Company's actual historical results and expected future performance. Based on the analysis on the prior page, the mean (ex. high and low) of the multiples is chosen as the relevant data point. This relevant multiple is then applied to XYZ's respective financial metric, arriving at an average implied enterprise value of $XXM and an implied equity value of $XXM. A control premium of XX% (source: XXX) is applied to reflect ABC's economic and board control of XYZ, as well as ABC's active oversight of key initiatives and input in setting the strategic direction of the business. In addition, a marketability discount of XX% is applied based on the illiquid nature of the investment in XYZ, relative to the selected group of public comparable companies. The comparable company trading analysis arrives at an adjusted equity value of $XXM.

($ in millions)

	Weighting	As of 6/30/2018
LTM Adjusted EBITDA [1]		$XX
Comparable Company Valuation Multiple		XX
Implied Enterprise Value	XX%	**$XX**
Forward Adjusted EBITDA [1]		**$XX**
Comparable Company Valuation Multiple		XX
Implied Enterprise Value	XX%	**$XX**
Average Enterprise Value		**$XX**
Less: Net Debt		(XX)
Implied Equity Value		$XX
Control Premium [2]		xx%
Marketability Discount		(xx%)
Adjusted Equity Value		**$XX**

[1] Adjusted for non-recurring charges. Pro forma for acquisitions and expected synergies.

[2] Source: "XXX", page X.

The following table summarizes the historical trading multiples for the set of comparable companies used in the above analysis. As illustrated by the table below, the mean (ex. high and low) LTM EBITDA multiple has increased from XX as of December 31, 2017 to XX as of June 30, 2018.

		Enterprise Value / LTM EBITDA as of:				
Company Name	**Ticker**	**12/31/2014**	**12/31/2015**	**12/31/2016**	**12/31/2017**	**6/30/2018**
XXX	Nasdaq: XXX	XX	XX	XX	XX	XX
XXX	Nasdaq: XXX	XX	XX	XX	XX	NM
XXX	Nasdaq: XXX	XX	XX	NM	XX	XX
XXX	NYSE:XXX	XX	XX	XX	XX	XX
XXX	NYSE:XXX	XX	XX	XX	XX	XX
XXX	NYSE:XXX	XX	XX	XX	XX	XX
Mean		**XX**	**XX**	**XX**	**XX**	**XX**
Median		**XX**	**XX**	**XX**	**XX**	**XX**
Mean (Ex. High & Low)		**XX**	**XX**	**XX**	**XX**	**XX**

Note: Multiples in excess of 30.0x are considered not material.

Comparable Company Transaction Analysis

The selection of comparable company transactions was based on identifying similar end-markets and comparable fundamentals driving these businesses, generally including educational product businesses and was compiled in 4 different groups: (i) XXX, (ii) XXX, (iii) XXX, and (iv) XXX. We have not considered transactions which occurred prior to 12/31/20XX, as we feel this is a relevant time frame for transactions. The comparable transactions represented strategic and financial acquisitions. The table below highlights various details for each comparable transaction, including the target, acquirer, date, enterprise value, LTM revenue multiple, and LTM EBITDA multiple.

($ in millions)

				TEV / LTM	
Target	**Acquiror**	**Date**	**TEV**	**Revenue**	**EBITDA**
XXX					
XXX	XXX	May 2016	XX	XX	XX
XXX	XXX	May 2015	XX	NA	XX
XXX	XXX	Apr 2015	XX	XX	XX
XXX	XXX	Jan 2015	XX	XX	XX
XXX					
XXX	XXX	May 2017	XX	XX	XX
XXX	XXX	Apr 2017	XX	XX	XX
XXX	XXX	Jul 2016	XX	XX	XX
XXX	XXX	Jul 2016	XX	XX	XX
XXX					
XXX	XXX	Dec-16	XX	XX	XX
XXX					
XXX	XXX	May-18	XX	XX	XX
XXX	XXX	Jan-16	XX	XX	XX
Mean				**XX**	**XX**
Median				**XX**	**XX**
Mean (Ex. High & Low)				**XX**	**XX**

Note: Transaction details are confidential.

Based on the above, the mean (ex. high and low) of the multiple of EV/LTM EBITDA is chosen as the relevant data point. This multiple of XX is then applied to XYZ's LTM EBITDA of $XXM, arriving at an implied enterprise value of $XXM and an implied equity value of $XXM.

($ in millions)

	As of 6/30/2018
LTM Adjusted EBITDA [(1)]	$XX
Comparable Company Valuation Multiple	XX
Implied Enterprise Value	**$XX**
Less: Net Debt	(XX)
Implied Equity Value	**$XX**

(1) Adjusted for non-recurring charges. Pro forma for acquisitions and expected synergies.