The Case Of Alpha Inc.: A study In Forecasting And Valuation

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ABSTRACT

ALPHA Inc., a manufacturing entity, hired James to help put their records in for 2006 and 2007. James completed the financial statements to gain an understanding of the accounting transactions and financial results. In addition, ALPHA Inc. requested a five-year forecast for future financing and wanted a valuation of the company for possible sale or merger. After students complete the accounting relationships, financial analysis, forecast and valuation, they will have a solid background to complete the financial section of a business plan. This case is most appropriate for an upper division accounting or finance course.

Keywords: Financial Statement Analysis- Forecasting- Valuation

EXECUTIVE SUMMARY

On Tuesday January 4, 2009, ALPHA Inc., a manufacturing entity, hired James Savage, a young, astute and ambitious consultant. At the meeting, James received a simple chart of accounts, an Opening Day Balance Sheet, First Year Balance sheet, and First year Income Statement.

After James compiled an income statement, balance sheet, cash flow statement and financial ratios for 2005 through 2006, he needed to develop a five-year forecast for 2008 to 2012 and a valuation under three different methods. In creating the forecast, ALPHA decided to purchase a lathe and drill press to improve operations.

THE CASE

On Tuesday morning, ALPHA hired James Savage, a young, astute and ambitious consultant. At the first meeting with the president, George Key, James learned that the company had no solid financial records and lacked operational understanding for the past three years. George revealed that financial records were limited and not maintained for the last three years.

In order to gain an understanding of ALPHA's operations, James compiled: a 2005 through 2007 Balance Sheet (see Table 1), a 2005 through 2007 common size balance sheet (see Table 2), a 2005 through 2007 statement of retained earnings (see Table 3), a 2005 through 2007 Income Statement (see Table 4), 2006 and 2007 cash flow statement (see Table 5), and 2005 through 2007 ratio analysis table (see Table 6). However, James understood that he still had the hardest part of the consulting job to complete – the forecast and valuation.

After the financial ratios, James needed to complete a five-year forecast to help in determining the valuation of ALPHA, a "C" Corporation. George noted the forecast should be on an annual basis for 2008 through 2012. George wanted to make sure that James made the correct assumptions in the forecast and decided that he would like to see a list of all assumptions. George stated, "Your assumptions must be logical, reasonable, and defensible for each component forecasted in each statement. You cannot just make changes in numbers without justification."

George mentioned to James that he was planning to finance two new pieces of equipment in 2008 and the following information was available for the forecast:

The first piece of equipment would be a new lathe with XYZ cutting and shaping. The life of the machine would be 5-10 years and cost $55,000. The second purchase, a Drill Press, would cost $35,000 and have a useful life of 5-10 years.

George wanted to see a repayment schedule with total payments, interest and principal for each piece of equipment. However, George did not know what an acceptable rate of interest or repayment time would be for the equipment. In addition, George wanted James to answer the following questions about the loans:

- Will these loans be secured or unsecured? If secured, what type of collateral would be needed for the loans?
- What will be the impact on the financial statements for these two pieces of equipment?

In addition, George mentioned that he would like to take out $100,000 in dividends each year over the next five years to invest in other personal projects.

Lastly, James needed to figure out a value for ALPHA, per George's request. James thought that the following methods were appropriate: Book Value method (Assets-Liabilities), Liquidation Valuation method (i.e. 60% of accounts receivable, 25% of equipment, and 20% of inventory) and Free Cash flow Method that included the following data:

- Start with Earnings before Interest and Taxes
- Add back owner's salary, depreciation, personal expense
- Subtract the new salary for the owners, new equipment purchases or payments for new equipment, and investment in inventory to determine free cash flow
- A good rate of return on the investment of the company would range from 20 to 35% because the company is privately held.

Do not forget:

- To forecast for five years
- Discount the terminal value plus all five years back to the present value; subtract debt to be paid and capital gain taxes to determine a final value for the company.

James must complete the following items for George as part of his consulting contract:

PART I

Complete a five year forecast of the income statement, balance sheet and cash flow statement for ALPHA that:

- Incorporates the two loan payments (including the repayment term and interest rate) to show the impact of the loans on the company operations
- Uses information about the industry to shape the forecast
- Provides a list of assumptions for the forecast
- Includes a term sheet that helps structures the two loans on the equipment that includes the interest rate, repayment term, schedule of annual repayment, and determines collateral

PART II

Determine the value for ALPHA Inc. under the following methods:

- Book value
- Liquidation Value
- Free Cash Flow

Some questions that James had before rendering his decision to George were: What are the advantages and disadvantages of each method? Which method best represents the firm's value?

Remember that the key to a good valuation is a list of assumptions needed in determining the firm value.

AUTHOR INFORMATION

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Table 1 - Historical Balance Sheet

	Beg 2005	2005	2006	2007
Assets				
Current Assets				
Cash	$249,993	$367,425	$523,717	$774,371
Accts Rec	$36,283	$42,549	$52,281	$50,027
Inventory	$17,555	$10,952	$16,450	$17,925
Total CA	$303,831	$420,926	$592,448	$842,323
Propert, Plant and Equipment				
Equipment & Fixtures	$372,789	$415,678	$464,967	$513,221
Transportation Equipment	$30,769	$30,769	$30,769	$30,769
Accum Depr	($270,816)	($326,757)	($390,885)	($464,939)
Total PP&E	$132,742	$119,690	$104,851	$79,051
Total Assets	$436,573	$540,616	$697,299	$921,374
Liabilities				
Current Liabilities				
Accts pay	$32,568	$71,711	$127,255	$155,914
Wages payable	$13,524	$11,764	$13,274	$15,712
FIT Payable	$2,853	$1,452	$2,740	$4,236
Total CL	$48,945	$84,927	$143,269	$175,862
Long-term Liabilities				
Loan Payable	$322,188	$357,188	$360,464	$412,108
Total Long-term Liab	$322,188	$357,188	$360,464	$412,108
Total Liab	$371,133	$442,115	$503,733	$587,970
Equity				
Common Stock	$100	$100	$100	$100
Retained Earnings	$65,340	$98,401	$193,466	$333,304
Total Equity	$65,440	$98,501	$193,566	$333,404
Total Liab & Eq	$436,573	$540,616	$697,299	$921,374

Table 2 - Historical Common Size Balance Sheet

Balance Sheet	**Beg 2005**	**2005**	**2006**	**2007**	**Beg 05-06**	**05-06**	**06-07**
Assets							
Current Assets							
Cash	57.3%	68.0%	75.1%	84.0%	47.0%	42.5%	47.9%
Accts Rec	8.3%	7.9%	7.5%	5.4%	17.3%	22.9%	-4.3%
Inventory	4.0%	2.0%	2.4%	1.9%	-37.6%	50.2%	9.0%
Total CA	69.6%	77.9%	85.0%	91.4%	38.5%	40.7%	42.2%
Propert, Plant and Equipment							
Equipment & Fixtures	85.4%	76.9%	66.7%	55.7%	11.5%	11.9%	10.4%
Transportation Equipment	7.0%	5.7%	4.4%	3.3%	0.0%	0.0%	0.0%
Accum Depr	-62.0%	-60.4%	-56.1%	-50.5%	20.7%	19.6%	18.9%
Total PP&E	30.4%	22.1%	15.0%	8.6%	-9.8%	-12.4%	-24.6%
Total Assets	100.0%	100.0%	100.0%	100.0%	23.8%	29.0%	32.1%
Liabilities							
Current Liabilities							
Accts pay	7.5%	13.3%	18.2%	16.9%	120.2%	77.5%	22.5%
Wages payable	3.1%	2.2%	1.9%	1.7%	-13.0%	12.8%	18.4%
FIT Payable	0.7%	0.3%	0.4%	0.5%	-49.1%	88.7%	54.6%
Total CL	11.2%	15.7%	20.5%	19.1%	73.5%	68.7%	22.7%
Long-term Liabilities							
Loan Payable	73.8%	66.1%	51.7%	44.7%	10.9%	0.9%	14.3%
Total Long-term Liab	73.8%	66.1%	51.7%	44.7%	10.9%	0.9%	14.3%
Total Liab	85.0%	81.8%	72.2%	63.8%	19.1%	13.9%	16.7%
Equity							
Common Stock	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retained Earnings	15.0%	18.2%	27.7%	36.2%	50.6%	96.6%	72.3%
Total Equity	15.0%	18.2%	27.8%	36.2%	50.5%	96.5%	72.2%
Total Liab & Eq	100.0%	100.0%	100.0%	100.0%	23.8%	29.0%	32.1%

Table 3 - Historical Retained Earnings Statement

	2005	2006	2007
Beginning Retained Earnings	$65,340	$98,401	$193,466
Plus Net Income	$33,061	$95,065	$139,838
Subtotal	$98,401	$193,466	$333,304
Less: Dividends	$0	$0	$0
Ending Retained Earnings	$98,401	$193,466	$333,304

Table 4 - Historical Income Statement

Income Statement	2005	%	2006	%	2007	%	05-06	06-07
Gross Sales	$1,038,569	100.0%	$1,239,391	100.0%	$1,060,627	100.0%	19.3%	-14.4%
Cost of goods sold								
Material	$106,177	10.2%	$117,847	9.5%	$65,401	6.2%	11.0%	-44.5%
Shop tools	$31,355	3.0%	$35,945	2.9%	$66,876	6.3%	14.6%	86.1%
Direct Labor	$312,400	30.1%	$330,888	26.7%	$328,848	31.0%	5.9%	-0.6%
Cost of Goods Sold	$449,932	43.3%	$484,680	39.1%	$461,125	43.5%	7.7%	-4.9%
Gross Margin	$588,637	56.7%	$754,711	60.9%	$599,502	56.5%	28.2%	-20.6%
Operating Expenses								
Officer's Salary	$285,246	27.5%	$361,019	29.1%	$164,418	15.5%	26.6%	-54.5%
Payroll Taxes	$31,922	3.1%	$28,925	2.3%	$31,021	2.9%	-9.4%	7.2%
Rent	$23,268	2.2%	$23,268	1.9%	$25,689	2.4%	0.0%	10.4%
Depreciation	$55,941	5.4%	$64,128	5.2%	$74,054	7.0%	14.6%	15.5%
Insurance	$29,360	2.8%	$35,539	2.9%	$28,309	2.7%	21.0%	-20.3%
Telephone and Utilities	$14,235	1.4%	$16,148	1.3%	$12,232	1.2%	13.4%	-24.3%
Travel and Entertainment	$6,789	0.7%	$7,845	0.6%	$9,377	0.9%	15.6%	19.5%
Repairs and Maintenance	$37,640	3.6%	$49,443	4.0%	$21,394	2.0%	31.4%	-56.7%
Office Expenses	$24,871	2.4%	$26,875	2.2%	$37,981	3.6%	8.1%	41.3%
Auto Expense	$7,430	0.7%	$8,336	0.7%	$9,049	0.9%	12.2%	8.6%
Total Operating Expense	$516,702	49.8%	$621,526	50.1%	$413,524	39.0%	20.3%	-33.5%
Income from Operations	$71,935	6.9%	$133,185	10.7%	$185,978	17.5%	85.1%	39.6%
Other Income and expense								
Interest Expense	$9,532	0.9%	$8,778	0.7%	$14,186	1.3%	-7.9%	61.6%
Earnings before taxes	$62,403	6.0%	$124,407	10.0%	$171,792	16.2%	99.4%	38.1%
Taxes	$29,342	2.8%	$29,342	2.4%	$31,954	3.0%	0.0%	8.9%
Net income	$33,061	3.2%	$95,065	7.7%	$139,838	13.2%	187.5%	47.1%

Table 5 - Historical Cash Flow Statement

Cash Flow Statement	**2006**	**2007**
Operating:		
Net Income	$95,065	$139,838
+Depreciation & Amortization	$64,128	$74,054
-Incr/+Decr in Receivables	($9,732)	$2,254
-Incr/+Decr in Inventory	($5,498)	($1,475)
-Incr/+Decr in Other Current Assets	$0	$0
+Incr/-Decr in Accounts Payable	$55,544	$28,659
+Incr/-Decr in Other Liabilities	$2,798	$3,934
=Cash From Operations	$202,305	$247,264
Investing:		
-Capital Expenditures	($49,289)	($48,254)
-Increase in Investments	$0	$0
-Purchases of Intangibles	$0	$0
-Increase in Other Assets	$0	$0
=Cash From Investing	($49,289)	($48,254)
Financing:		
+Increase in Debt	$3,276	$51,644
-Dividends Paid on Preferred	$0	$0
+Increase in Pref. Stock	$0	$0
-Dividends Paid on Common	$0	$0
+/-Net Issuance of Common Stock	$3,276	$51,644
+/-Clean Surplus Plug (Ignore)	$0	$0
=Cash From Financing	$3,276	$51,644
Net Change in Cash	$156,292	$250,654
+ Beginning Cash Balance	$367,425	$523,717
= Ending Cash Balance	$523,717	$774,371

Table 6 - Historical Ratio Analysis

Profitability	**2005**	**2006**	**2007**
Sales Growth	NA	19.3%	-14.4%
Gross Margin	56.7%	60.9%	56.5%
EBITDA Margin	12.3%	15.9%	24.5%
Net Operating Margin	3.2%	7.7%	13.2%
ROE	40.3%	65.1%	53.1%
ROA	6.8%	15.4%	17.3%
Asset Efficiency			
Accounts Receivable Turnover	26.3	26.1	20.7
Accounts Receivable Days on hand	13.9	14.0	17.6
Inventory Turnover	31.6	35.4	26.8
Inventory Days on hand	11.6	10.3	13.6
PP&E Turnover	8.2	11.0	11.5
Liquidity & Leverage			
Current Ratio	5.0	4.1	4.8
Quick Ratio	4.8	4.0	4.7
Debt-to-Equity	362.6%	186.2%	123.6%
Total Liabilities-to-equity	448.8%	260.2%	176.4%
Cash Flow			
Free Cash Flow	N/A	$196,128	$232,382
EBITDA Interest Coverage	10.34	19.14	16.08

