

ACCT 321 Intermediate Accounting for Finance
Working Capital Case Study [30 points]

Your job is to make ABC cash flow in years 2 and 3 (**positive ending cash balances**); which means you must balance ABC's cash conversion cycle days with ABC's increase in sales volume for years 2 and 3. **YOU MUST DETERMINE ABC'S SALES** for years 2 and 3 **and the RELEVANT days in accounts receivables, days in inventory and days in accounts payable** in order for ABC to cash flow. You will probably have to try several different combinations until ABC cash flows. Other than that, use the other information given in the case below.

ABC Company is a start-up medical equipment manufacturing company. ABC developed a blood testing device that accurately diagnoses the Ebola virus in 15 minutes or less. The financing of ABC consisted of founders' equity investment totaling \$369,074 and a \$4,000,000 bank loan.

In year 1 ABC generated a small net profit of \$4,718 on total sales of \$3,000,000, a gross margin of 35% and operating expenses of 25%. Also in year 1 ABC generated a cash deficiency totaling \$4,369,074, which means they spent all of their financing in year 1. ABC's year 1 cash conversion cycle totaled 51 days, which consisted of days in accounts receivable of 45 days, days in inventory of 51 days and days in accounts payable of 45 days. Unfortunately, the founders have no more cash to invest in the company and the company does not qualify for additional debt financing.

ABC believes it can reasonably achieve a 37% gross margin for years 2 and 3 and reduce operating expenses to 19% and 14% of sales for years 2 and 3, respectively. Furthermore, in order to increase sales ABC must invest \$75,000 and \$950,000 in capital expenditures in years 2 and 3, respectively. Also, ABC must pay its debt principal and interest obligations in years 2 and 3.

Attached are schedules of ABC's additional information, balance sheets, income statements and cash flows. Based on the given information you must determine ABC's increase in sales and days in accounts receivable, days in inventory and days in accounts payable. Based on those days you must also compute ABC's accounts receivable, inventory and accounts payable for years 2 and 3 in order to compute ABC's cash flows. Additionally, based on your results, you must complete ABC's balance sheets, income statements and cash flows for years 2 and 3.

I recommend you begin with the attached excel spreadsheets, but develop the appropriate formulas to automatically change the balance sheet, income statement and cash flows when you change your inputs. For example, you should design your spreadsheet so that when you change days, excel will compute accounts receivable, inventory and accounts payable on the balance sheet and cash flows. Furthermore, I suggest you design your spreadsheet so that when you change the percentage increase in sales it will also automatically update the sales line in the income statement and net income or loss line on the cash flows (this is what we did in our entire semester balance sheet, income statement and statement of cash flow assignments earlier in the semester). The attached schedules can be used as a guide to design your spreadsheets.

No handwritten answers will be accepted.

Line	Information	Year 1	Year 2	Year 3
1	Days in accounts receivable	45		
2	Days in accounts payable	45		
3	Days in inventory	51		
4	Sales change	100.00%		
5	Operating expenses	25%	19%	14%
6	Margin	35%	37%	37%
7	Income tax rate	40%	40%	40%
8	Days in year	365	365	365
9	Property plant and equipment gross addition	\$ 3,500,000	\$ 75,000	\$ 950,000
10	Financing cost	\$ 100,000		
11	Initial debt	\$ 4,000,000		
12	Debt amortization (months)	120		
13	Interest rate	6.75%		
14	Monthly payment	\$ (45,929.65)		

Line	Balance Sheets	Year 1	Year 2	Year 3
	Assets			
1	Cash	\$ -		
2	Accounts receivable	\$ 369,863		
3	Inventory	\$ 272,466		
4	Prepaid expenses	\$ 15,000	\$ 15,000	\$ 15,000
5	Current assets	\$ 657,329		
6	Property, plant and equipment, net of depreciation	\$ 3,460,000	\$ 3,490,000	\$ 4,365,000
7	Other assets	\$ 150,000	\$ 165,000	\$ 140,000
8	Financing costs, net of amortization	\$ 90,000	\$ 80,000	\$ 70,000
9	Total assets	\$ 4,357,329		
	Liabilities			
10	Accounts payable	\$ 240,411		
11	Accrued expenses	\$ 30,000	\$ 47,000	\$ 52,000
12	Current portion of long-term debt	\$ 310,213	\$ 331,812	\$ 354,916
13	Income taxes payable (receivable)	\$ 3,145		
14	Current liabilities	\$ 583,769		
15	Long-term debt	\$ 3,399,768	\$ 3,067,956	\$ 2,713,040
16	Total liabilities	\$ 3,983,537		
	Shareholders' equity			
17	Common stock (10,000 shares outstanding; \$1 par value)	\$ 10,000	\$ 10,000	\$ 10,000
18	Additional paid-in capital	\$ 359,074		
19	Retained earnings (deficit)	\$ 4,718		
20	Total shareholders' equity	\$ 373,792		
21	Total liabilities and shareholders' equity	\$ 4,357,329		

Line	Income Statements	Year 1	Year 2	Year 3
1	Sales	\$ 3,000,000		
2	Cost of sales	\$ 1,950,000		
3	Gross profit	\$ 1,050,000		
4	Operating expenses	\$ 750,000		
5	Amortization	\$ 10,000	\$ 10,000	\$ 10,000
6	Depreciation	\$ 40,000	\$ 45,000	\$ 75,000
7	Income (loss) from operations	\$ 250,000		
8	Interest expense	\$ 261,137	\$ 240,943	\$ 219,344
9	Other income (expense)	\$ 19,000	\$ 8,000	\$ (17,000)
	Income (loss) before income			
10	taxes	\$ 7,863		
11	Income taxes or (refund)	\$ 3,145		
12	Net income (loss)	\$ 4,718		

Line	Cash Flows	Year 1	Year 2	Year 3		
1	Net income (loss)	\$ 4,718				
2	Amortization	\$ 10,000	\$ 10,000	\$ 10,000		
3	Depreciation	\$ 40,000	\$ 45,000	\$ 75,000		
4	Cash from (used) in operations	\$ 54,718				
	CAPEX					
5	Property plant and equipment	\$ 3,500,000	\$ 75,000	\$ 950,000		
6	Other assets	\$ 150,000	\$ 15,000	\$ (25,000)		
7	Financing costs	\$ 100,000	\$ -	\$ -		
8	Total CAPEX	\$ 3,750,000	\$ 90,000	\$ 925,000		
9	Increase (decrease) in non-cash and non-debt related working capital [schedule below]	\$ 383,773				
10	Cash flow (deficiency) [(lines 4,8,9)]	\$ (4,079,055)				
11	Operating cash cycle	96				
12	Cash conversion cycle	51				
	Funding of deficiency					
13	Long-term debt	\$ 4,000,000				
14	Common stock	\$ 10,000				
15	Additional paid-in capital	\$ 359,074				
16	Totaling funding	\$ 4,369,074				
	Ending cash					
17	Excess funding [(line 16 + line 10)]	\$ 290,019				
18	Payment of long-term debt	\$ (290,019)	\$ (310,213)	\$ (331,812)		
19	Net cash (deficiency)	\$ -				
20	Beginning cash	\$ -	\$ -			
21	Ending cash	\$ -				
	Working capital schedule					
22	Current assets	\$ 657,329				
23	Less cash	\$ -				
24	Non-cash current assets	\$ 657,329				
25	Current liabilities	\$ 583,769				
26	Less current portion of long-term debt	\$ 310,213				
27	Non-debt current liabilities	\$ 273,556				
28	Increase (decrease) in working capital	\$ 383,773				

A decrease (↓) in working capital from the prior year is a source of cash and an increase (↑) in working capital from the prior year is a use of cash. This is due to the combined changes in the current assets and current liabilities that comprise working capital - see the note on the statement of changes in cash flow for a fuller explanation.