**Final Exam Case: Topeka Adhesives: Financial Forecasting**

Karen and Elizabeth Whatley are twins. Their mother teaches Physics at a mid-western university and their father runs a successful engineering firm. Not surprisingly, they are quite gifted at math and science, and they've displayed these talents in numerous ways over the years. For example, they have won a number of state science fairs; achieved near-perfect math SAT scores, and graduated Summa Cum Laude with Chemistry degrees from California Institute of Technology. After graduating college they took jobs with a major chemical company, though their long-term goal was to open their own firm. The Whatleys completed a number of evening courses to increase their business skills. In their spare time the sisters loved to experiment and developed two relatively low-cost adhesives: glue and tape. They fulfilled a dream seven years ago when—with modest capital but contracts with a number of regional building supply stores—they formed Topeka Adhesives. The firm's products were top-notch and the company finished in the black its very first year, although the sisters were not entirely comfortable with the financial side of the business.

**A Marketing Decision**

About 12 months ago the partners concluded that Topeka's products were “underappreciated” and that “sales could—and should—be substantially higher.” They fired an unproductive salesperson and, more importantly, made a key marketing decision. The twins decided to reduce Topeka's advertising in trade journals and use the money saved to attend more trade shows. They reasoned that trade shows are a relatively inexpensive way to display the company's products and are an opportunity to meet major corporate buyers face to face. That is precisely what happened. The firm's exhibits were impressive, and the Whatleys made important contacts with some industrial users and even one national retailer, Spears. The sisters are in the process of negotiating a number of large contracts for the coming year (2011) and product inquiries are markedly higher.

As a result of all this, Topeka's sales growth is expected to increase sharply in the next three years, and sales are estimated to more than double by the end of 2012. The Whatleys predict sales of $1,933,100 in 2010, $2,609,700 in 2011, and $3,131,600 in 2012. On one hand, the twins are extremely pleased with the forecast because it is evidence of what they have long believed: The company manufactures quality products at a reasonable price. The downside is that such large growth will undoubtedly require external financing and could cause managerial difficulties.

While the partners will explore a number of financing alternatives, they recognize that the first step is to estimate the external funds needed for the 2010–2012 period. After all, before they decide on a financing option, they want a reasonable projection of what needs to be raised. And it is even possible that most of the expected growth can be internally financed.

**Forecasting Considerations**

In order to develop the forecast the partners decided to meet with Fred Lanzi, the firm's accountant, and Karl Shatner, Topeka's general manager. All agree that the sales projections are “quite reasonable” in view of the activity resulting from the trade shows and may even be a bit low. They also decide to concentrate on the 2010 forecast at the initial meeting.

A few months ago Shatner began implementing a number of cost-cutting measures that are expected to generate a 32 percent gross margin each year of the forecast. Due to economies of scale administrative expenses are expected to increase less than proportionately with sales, and the group estimates a 20 percent increase in 2010. The relevant tax rate is 40 percent.

Lanzi pointed out that the financial forecast need to consider the tighter credit terms offered by many of the firm's suppliers. Company records show that two years ago about 80 percent of Topeka's purchases were on terms of 2/10, net 30. That is, most suppliers offered a 2 percent discount to customers who paid within ten days but, in any event, full payment was expected by day thirty. Roughly 20 percent of the purchases were on terms of net 30. “We, of course,” noted Lanzi, “always took the discount when it was offered.”

Company records also show that during the past year only about half of the firm's suppliers offered the above discount. Lanzi strongly believes that even fewer vendors will offer a discount in the future, and thinks that it is wise to assume—and the Whatley's concur—that only a third of all future purchases will be made on terms of 2/10, net 30. In addition, he recommends that Shatner's gross margin estimate be reduced to 31 percent, in part because of fewer trade discounts. After some discussion, Shatner agrees that Lanzi's points “are well made and my estimate of gross margin is probably a bit high.”

The discussion then turns to working capital management. Inventory control has been a problem for Topeka at times. Elizabeth Whatley believes that inventory turnover (CGS/inventory) can be increased to 7.7 mainly by using suppliers with shorter delivery time. Karen Whatley, however, is skeptical. She thinks that it is unrealistic to think that the firm's inventory management can be improved and believes that some type of estimate based on historical inventory patterns is appropriate. Despite her objections, however, the group decides to use Elizabeth's estimate.

It is clear that the firm's historical experience with its accounts receivable will be of little help in future receivables. In the past, Topeka has offered terms of net 30; 1/10, net 30; and 2/10, net 30. Quite frankly, which one Topeka offered depended on the bargaining power and importance of the customer. And many of Topeka's new clients are quite large firms who have insisted on a longer payment period.

For the purpose of this forecast, the Whatleys decide to assume that they will offer credit terms of net 30 and net 45. They estimate that 40 percent of all sales will be on terms of net 30, and that 80 percent of this group will pay on time, though taking the full 30 days. The 20 percent who pay late are expected to take an extra 10 days, or 40 days in all.

Sixty percent of all sales are estimated on terms of net 45. The Whatleys believe that these customers will tend to be “more reliable and stable” and, thus, expect that 90 percent of these sales will be paid on time, that is, on day 45. The 10 percent who will be late are predicted to take an extra ten days.

The Whatleys expect that “virtually all” sales will be collected and they estimate that bad debt expense will be “insignificant” and can be ignored.

The group also thinks that cash should be 3 percent of sales, “other current” assets will be .6 percent of sales, and accruals are best estimated using past information.

The firm's predicted 2010 spending on plant, land, and equipment is $175,000. These expenditures partly reflect the replacement of existing equipment but mainly result from the new facilities necessary to accommodate the growth in sales.

**Financial Issues**

Topeka will pay no dividends during 2010. The firm has one loan outstanding and the amount due is $20,000 each year. Assuming no additional borrowing, annual interest expense will decline since the loan's balance also declines and the rate is fixed. Still, it is likely that some if not most of any new funds would be borrowed. For the time being, however, the forecasters decide to ignore the possibility of any new debt except for the assumption that interest expense will remain constant over the forecasting period.

Lanzi says he has enough information to develop an estimate for 2010 and then, as the meeting is about to break up, Karen Whatley raises an issue that she'd like to discuss at a future time. “We frequently negotiate credit terms with customers,” she notes. “And we often give in to the customer, especially if we sense we risk losing a sale. I'm interested in knowing when—if ever—we should be more hardcore about our credit terms. We've never really looked carefully at this question, you know.”

**Questions**

1. When Jim Davidson, a company foreman, heard that Topeka might need external funds he was quite puzzled. “I've seen the most recent balance sheet. And we seem to be rolling in dough, judging from the impressive amount of retained earnings.” Respond to Davidson's comment.
2. Develop a pro forma income statement for 2010. You may assume that depreciation equals the 2009 amount plus one-sixth of 2010 capital spending. The relevant tax rate is 40 percent.
3. Estimate purchases in 2010. *(Hint:* Cost of goods equals purchases plus beginning inventory minus ending inventory.)
	1. Develop the 2010 pro forma balance sheet.
	2. What is your estimate of funds needed in 2010?
	3. Suppose that Elizabeth Whatley is correct and that Topeka's inventory management is unlikely to improve. Develop an estimate of inventory using the “historical information” in Exhibit 1 and Exhibit 2. How does this affect the estimate of funds needed in 4(b)?
4. Use the percent of sales method to estimate funds needed in 2010 using the 2009 percentages.
5. Would you expect your answers in 4(b) and 5 to be similar? Explain.

***Exhibit 1.* Income Statements of Topeka Adhesives: 2007–2009 (000s)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2007 | 2008 | 2009 |
| Sales | $1,347.0 | $1,448.0 | $1,546.5 |
| Cost of goods | 956.4 | 1,010.7 | 1,076.4 |
| Gross margin | 390.6 | 437.3 | 470.1 |
| Administrative | 323.3 | 350.4 | 368.1 |
| Depreciation | 29.6 | 31.9 | 34.0 |
| EBIT | 37.7 | 55.0 | 68.0 |
| Interest | 14.0 | 12.0 | 10.0 |
| EBT | 23.7 | 43.0 | 58.0 |
| Taxes | 9.5 | 17.2 | 23.2 |
| Net income | $14.2 | $25.8 | $34.8 |
|  |  |  |  |

   ***Exhibit 2.*** **Balance Sheets of Topeka Adhesives: 2007–2009 (0000s)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2007 | 2008 | 2009 |
| Assets |  |  |  |
| Cash | $47.6 | $56.6 | $47.0 |
| Receivables | 97.3 | 88.5 | 110.8 |
| Inventory | 134.7 | 138.5 | 149.5 |
| Other current | 8.1 | 8.7 | 9.3 |
| Current assets | 287.7 | 292.2 | 316.6 |
| Gross fixed assets | 194.3 | 232.1 | 266.1 |
| Accumulated depreciation | (59.6) | (91.5) | (125.5) |
| Net fixed assets | 134.7 | 140.6 | 140.6 |
| Total assets | $422.4 | $432.8 | $457.2 |
|  |  |  |  |
| Liabilities and equity |  |  |  |
| Accounts payable | $39.8 | 39.5 | $48.3 |
| Debt due | 20.0 | 20.0 | 20.0 |
| Accruals | 28.3 | 33.3 | 34.0 |
| Current liabilities | 88.1 | 92.8 | 102.4 |
| Long-term debt | 120.0 | 100.0 | 80.0 |
| Common stock | 110.0 | 110.0 | 110.0 |
| Retained earnings | 104.2 | 130.0 | 164.9 |
| Total liabilities and equity | $422.4 | $432.8 | $457.2 |
|  |  |  |  |