

### CASE STUDY: DAVOS S.A.

Werner Wirtz, general manager of Davos S.A., looked across his desk at Mr. Charles Hubert, the company's sales manager. Mr. Hubert had just suggested that Davos increase its capacity to manufacture automatic timing devices.

Davos S.A. was a manufacturer of industrial controls and precision instruments, with headquarters and manufacturing facilities in Brussels. Its manufacturing operations in 2014 were conducted entirely in Brussels, but more than half of its 2014 sales were made in other countries.

First introduced in 2011, the company's automatic timers had been well received by Davos' customers both at home and abroad. By 2014 Davos was selling all that it could manufacture. Mr. Hubert was convinced that he could expand his sales by large amounts if adequate factory capacity could be provided.

"Our Brussels factory is already crowded," Mr. Bonheur, the company's director of manufacturing, told him. "The authorities won't give us a building permit to expand it, but I know of some vacant space that we can rent in Wemmel for € 50,000 a year. We could put all the timer operations in there." Wemmel is only 15 kilometers from Brussels and Mr. Bonheur was confident that he could supervise manufacturing operations in both places without difficulty. Working with Mr. Bonheur, Mr. Hubert prepared the preliminary estimates shown in exhibit 1:

Sales (30,000 units at € 50)		€ 1,500,000	
Out-of-pocket expenses:			
Factory labor and materials (30,000 units at € 28.40)	852,000		
Rent	50,000		
Other factory costs (excl. depr.)	70,000		
Marketing expenses	<u>160,000</u>		
Total expenses		1,132,000	
Profit contribution			<u>368,000</u>
Equipment required:			
New equipment to be purchased	250,000		
Old equipment to be moved	1		
Moving and installing cost	<u>5,000</u>		
Total			255,000

Payback period = 255,000 / 368,000 = 8.3 months

Mr. Hubert remarked that an eight-month payback period was hard to beat. As the controller examined the figures, he discovered two things. First, the sales and expense figures given in exhibit 1 were not expected to be achieved until the third year of the new factory's operation. Second, they represented the total sales and expenses of the timers. Since the company was already selling 10,000 timers a year, the controller did not believe that the profit on these units should be used to justify the opening of the new factory.

Mr. Hubert prepared detailed estimates of annual sales and marketing expenses, as summarized in exhibit 2:

	<u>units</u>	<u>value</u>	<u>annual marketing costs</u>
If all timers are manufactured in Wemmel			
Year 1	20,000	€ 1,000,000	€ 260,000
Year 2	25,000	1,250,000	260,000
Year 3 and after	30,000	1,500,000	160,000
If timers are not manufactured in Wemmel			
Wemmel	10,000	500,000	60,000

The controller knew that these volumes of sales would require sizable investment in working capital which Mr. Hubert had omitted from exhibit 1. On the basis of the company's past experience, he estimated that working capital requirements would be as follows (exhibit 3):

Cumulative balance required at beginning of year

If timers are manufactured in Wemmel:	
Year 1	€ 700,000
Year 2	750,000
Year 3	800,000

If timers are not manufactured in Wemmel 300,000

Mr. Bonheur explained that if the Wemmel factory were opened, all automatic timer production would be shifted to Wemmel. If the expansion proposal were rejected, however, the cost of producing 10,000 timers a year in Brussels would be € 31 per unit plus € 20,000 a year. All of these costs could be eliminated if operations were transferred to Wemmel.

“If we don't open up in Wemmel, we can sell old equipment locally for about € 10,000. If we keep it, our only cost would be about € 5,000 to get it from Brussels to Wemmel. This € 5,000 can be subtracted from the taxable income from our other operations right away.”

For purposes of analysis, it was agreed that the new Wemmel plant should be able to operate for at least ten years and that the company's investment in working capital would be a reasonable measure of the value of the Wemmel assets at the end of that time.

Income, as well as gains on the sale of equipment, are taxed at a 30 percent rate. Depreciation for tax purposes on the new equipment to be purchased for the Wemmel plant would be € 50,000 a year for five years. The company's minimum acceptable rate of return is 10 percent.

Exhibit 4 – Estimated factory costs – Wemmel factory

	<u>Variable costs/unit</u>	<u>Fixed costs per year</u>		
		<u>Rental</u>	<u>Depreciation</u>	<u>Other</u>
Year 1	€ 29.60	€ 50,000	25,000	70,000
Year 2	28.80	50,000	25,000	70,000
Year 3 and after	28.40	50,000	25,000	70,000