WILSON ELECTRONICS, INC.*

The Wilson Electronics Corporation was an industrial supplier of small electronic components used by other manufacturing firms. The company prided itself on the quality of its products and on its ability to manufacture to the precise specifications of industrial customers.

One of Wilson's major customers was a producer of a varied line of equipment and appliances. This customer, Magnus Manufacturing, Inc. purchased a wide line of Wilson products. Magnus had contracted with Wilson to purchase an intricate thermostatic switch. To produce the requested item, known as Model K-50, Wilson developed a specialized stamping machine that could not be readily used for any other purpose, at an investment of almost $250,000. At the time the decision was made, Magnus Manufacturing agreed to purchase at least 10,000 units of K-50 yearly at a price not to exceed $16 per unit for a minimum of 5 years. Wilson estimated that the cost of production of K-50, including depreciation on the specialized machinery, would approximate this price. That is, Wilson only expected to break even on K-50, but the Magnus account was believed to be so important that Wilson undertook to produce this item as a service to this customer. The possibility of selling additional quantities of K-50 to others was considered to be rather remote. However, the physical capacity to increase output existed, and such production would not require any additional capital investment.

A problem in quality control developed with K-50 during the third contract year. To settle the resulting dispute, Wilson agreed to lower the price of K-50 units to $15.50 each. Mr. Maxwell, president of Wilson, stated, "We are determined to maintain the loyal patronage of the Magnus Manufacturing Company. Their volume of purchases is considerable. We must remember that the machinery and equipment currently used on K-50 cannot readily be used for any other production. It cannot be permitted to remain idle."

The following year, the purchasing director of Rigbee Controls, which was not a customer of Wilson, contacted the firm about an unusual requirement for a thermostatic switch. The Wilson engineers discovered that with minor changes in specifications, K-50 would adequately fulfill Rigbee's requirements. Rigbee then asked Wilson to quote a price for quantities of 15,000 units annually. Rigbee also said that it would contract for delivery in these quantities for several years to come.

Wilson engineers reconfirmed the fact that ample capacity existed to expand production of K-50. The comptroller, Fred Shaw, indicated that production costs would be lower at this increased volume. He estimated that the reduced costs could permit Wilson to earn a profit estimated at $3.68 per K-50 unit. It was decided to offer K-50 to Rigbee at $15.50 each.

Rigbee's executives responded that they could not use K-50 at any price higher than $11.50 per unit. They said they would be better off substituting another apparatus entirely if that price could not be met. Rigbee's executives also admitted that they probably never would be a large purchaser of Wilson products other than K-50. The Wilson engineers confirmed the fact that Rigbee could not afford K-50 at more than $11.50 and that Rigbee would probably never purchase any other items from Wilson. They also confirmed that Magnus would not use more than 10,000 of the K-50 units annually, no matter how low Wilson set the price. One Wilson vice president said that maybe the Rigbee price would be acceptable. He thought the increased volume would lower production costs enough to offset the small loss resulting from the sale of K-50 to Magnus at $15.50.

"You're not suggesting that we sell to Rigbee at $11.50 and to Magnus at $15.50, are you?" exclaimed Mr. Ernest Bennett, the vice president of the sales division. "This line of reasoning is out of the question! Most Rigbee and Magnus executives are friends. How would Magnus react if we charge our good customer more than we charge Rigbee? This conduct is highly questionable on both a legal and an ethical basis."

Mr. Maxwell interrupted the dispute and asked the vice president of sales for his specific suggestions on the matter. "Well, let's look at it this way," Mr. Bennett responded. "K-50 has been an apparent loser. The reason—sales were too low! We've got the chance to add 15,000 more units, and we believe we could sell still another 25,000 units if we priced realistically! The specifications of K-50 lend themselves to a wider range of industrial applications than we thought. Five more of our accounts would be willing to buy this item, which would push our volume to 50,000 units per year. This is, admittedly, our current productive capacity, but I feel sure we could reach this level within 1 year."

"Mr. Bennett, your job is to sell our products," Mr. Maxwell interrupted, "but why haven't we exploited this market potential long ago?"

"Well, to hit a capacity volume of 50,000 units, we need to offer K-50 at a competitive price. If we can offer the item for $10, I know this volume can be reached," Mr. Bennett replied.

"Pardon the interruption," broke in Alfred Horn, assistant to the president. "Wouldn't this price be below our cost of production?"

"I have asked the comptroller to bring the detailed cost data for capacity volume. Did you, Fred?" Mr. Bennett asked.

Fred Shaw, the comptroller, was the next to speak. "Ernest, I'm sorry that I did not have time to go over this with you in greater detail before. Costs are lower toward capacity, but these savings are not as great as you evidently assumed. I prepared a cost schedule to make it easier for us to view the situation at various volumes. I calculated unit costs and the charges at 10,000, 25,000, and 50,000 unit levels of production. Labor charges per unit are constant, since this is a machine operation and output varies directly with the time of the run. We experience some economies on material by purchasing in larger quantities, and our subcontractor will be able to plate the necessary components at half the price if we hit 50,000 units. But, on the other hand, we must remember that the capacity volume will require more frequent servicing. We'll lose some ground here—3 cents in indirect charges, to be exact, between 25,000 and 50,000 units. But, of course, that is only an added expenditure of $1,500."

"You'll have to slow up, Fred, I'm afraid this gray head can't absorb your calculations quite so quickly," Mr. Maxwell interrupted.

"I'm sorry, Mr. Maxwell—perhaps I'd better distribute the data. If we sell and produce K-50 at a capacity output, our costs per unit only fall to $10.56. I've itemized these details for you on the cost sheet I've prepared for each of you." (At this point, Mr. Shaw distributed the cost data that are presented in Table 1.)

The executives examined the cost data for a few moments. Mr. Horn was the first to speak. "Perhaps I'd better summarize what Mr. Shaw appears reluctant to point out. He is saying that Mr. Bennett would have us lose 56 cents on every item of K-50 we sell at this 50,000 volume! Or at least we would, in fact, lose 32 cents per item if we even sell to Rigbee and hit a total of 25,000 units! I say, just sell only to Magnus as a favor at $15.50 and let the sleeping dogs lie."

"Never mind," exclaimed Mr. Maxwell angrily. "We here at Wilson have an obligation to our stockholders as well as to our customers. It appears that I was the one who made all the decisions on the K-50 from the very beginning. So I'll make this one, too. This meeting is adjourned!"

TABLE 1

Unit costs for model K-50 at various production volumes

	Unit Costs at Output of:		
Costs	10,000	25,000	50,000
Labor	3.18	3.18	3.18
Material	1.52	1.48	1.44
Plating	.10	.08	.05
Indirect charges*	.48	.48	.51
Depreciation allowance†	4.00	1.60	.80
Overhead‡	1.06	1.06	1.06
Total factory production cost	10.34	7.88	7.04
Selling and administration charges§	5.17	3.94	3.52
Total costs per unit	15.51	11.82	10.56

*Indirect charges include supplies, repairs, and routine maintenance on specialized equipment, electric power, etc., expressed on a per-unit-of-output basis.
†Depreciation is straight-line basis over life of Magnus contract, less residual value, computed per unit of output.
‡Allocation to cover fixed factory overhead costs, charged at the rate of 33.3% of direct labor.
§Allocation to cover selling and administrative expenses, charged at the rate of 50% of total factory production costs.

QUESTIONS

1. Analyze the cost data, especially considering the fixed and variable costs and the allocation bases.
2. What action should Mr. Maxwell take regarding the Rigbee offer and the pricing of the K-50 switch?
3. What are the characteristics of the relationship between Wilson Electronics and Magnus Manufacturing?
4. How do you evaluate the initial decision of supplying K-50 to Magnus?
5. How should Mr. Maxwell decide about the offer from Rigbee and the pricing of the K-50 switch?
6. How can the criteria to analyze costs impact on that decision?
7. If Wilson Electronics decides to supply other customers (other than Magnus) with K-50: what risks might emerge to the relationship with Magnus?