

Product Costing and Pricing: Belknap-Catlin LLC Part II

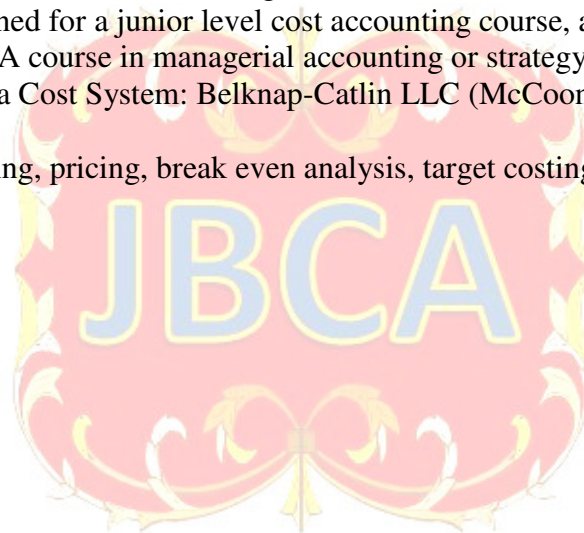
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ABSTRACT:

This case introduces the student to a number of cost and pricing issues related to the introduction of a new product. It is a practical real world product costing and pricing in an environment of incomplete information. The implications of big data are also considered. Belknap-Catlin LLC is a manufacturer of testing devices used in the automotive industry. The company has launched a new product, its sales are good but its costs, based on the application of activity based costing, are high on a per unit basis. Though total company sales are higher than ever, overall profitability has declined. Pricing decisions about the new product must be made.

This case is designed for a junior level cost accounting course, a senior level strategy course or a Graduate MBA course in managerial accounting or strategy. This case is a continuation of Refining a Cost System: Belknap-Catlin LLC (McCoon and Christensen, 2018).

Key Terms: Product costing, pricing, break even analysis, target costing, big data



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CLASSROOM USE

This case is designed for a junior level cost accounting course, a senior level strategy course or a Graduate MBA course in managerial accounting or strategy. The course should be utilized after students have been introduced to product costing methods, target costing, and break even analysis as well as product pricing.

Learning objectives include:

- Students will gain an understanding of practical aspects of product costing and product pricing.
- Students will learn how to solve problems and work with incomplete information. Problems include those involving: incremental analysis, break even analysis, and target costing.
- Students will gain an understanding of the many factors associated with pricing decisions.

This is a versatile case which can be used in one or more class sessions. The case could be used in the following manners:

- 1) As relatively straight forward cost or managerial accounting problems covering such areas as break even analysis, target costing and the decision to discontinue a product line. The case provides the student with sufficient information to perform such calculations.
- 2) As more involved cost/managerial accounting problems covering such things as multiproduct break even analysis, target costing with required rates of return, and incremental analysis after considering sunk and opportunity costs.
- 3) As a conceptual exercise in identifying appropriate factors in determining appropriate product pricing strategies. This could be done individually, in groups, or as a class.
- 4) As a conceptual discussion of overall company business strategy including consideration of the growing use and value of big data.

Detailed worked out solutions are available to college instructors upon request.

SUMMARY OF PART 1

Belknap-Catlin LLC is a manufacturer of testing devices used in the automotive industry. The company has launched a new more technically advanced product, its sales are good and its costs, based on the company's traditional costing system seem low. Yet overall profitability has declined. The company needed better product costing information and a more sophisticated costing analysis utilizing Activity Based Costing was performed (McCoon and Christensen, 2018).

A summary of the results of the cost analysis performed for Part 1 (as modified) is in Exhibit A. As the results indicate, manufacturing costs for the new product on a per unit basis are considerably higher using Activity Based Costing. Indeed the manufacturing cost per unit of the new product increased from just over \$ 56 per unit using the company's existing cost system to nearly \$ 222 per unit utilizing a more elaborate and likely accurate Activity Based Costing system.

Introduction and Problem Statement

The manufacturer Belknap-Catlin LLC faced a dilemma: it had invested considerable time, effort, and capital in the development of a high-tech version of its existing product line. The new product named TPB was a technological marvel, earning engineering awards world-wide.

Given design and production lead times there was expected to be a time lag between product introduction and sales taking off. In spite of this upon launch the new product's sales exceeded expectations. It is likely sales of the new product will soar beginning in the next several quarters.

Under the existing pricing scheme, which utilized the lower and inaccurate unit cost based on a single cost driver, the new product – TPB is being sold for \$ 140 per unit. This is less than two-thirds of the unit cost as determined under Activity Based Costing. That unit cost as reflected in Exhibit A is nearly \$ 222. This also likely explains why as revenue has increased, income has decreased in the most recent quarter. Clearly a new price and a new pricing strategy is needed. Cooper and Kaplan (1991) observe that repricing products which use greater resources is often necessary after an Activity Based Costing analysis has been performed.

The first thing to consider, as it stands the unit price does not cover unit costs. Indeed it does not even cover unit variable costs. This of course means that the more units which are sold the more money the company will lose. This is not a sustainable state of affairs. Though the company's other products are all profitable, they do not generate enough income to cover anticipated losses from the new product. As Exhibit C indicates, TPB is losing money with prospects of losing a lot more money as sales grow. First consideration is therefore: do we drop this product?

The company has invested considerable sums in the development of TPB. As the project's development occurred over several years the exact financial investment is unknown, though it is thought to be in the neighborhood of \$ 6.5 million dollars – considerable sum for the company. Indeed the investment constitutes approximately half of the company's equity. See Exhibit D for the company's balance sheet.

Belknap made such a large investment as a matter of necessity. Though the company has always been profitable, its existing product lines were under increasing cost pressure from competitors. The company had relied for too long on what is quickly becoming dated technology. With the cost of computing and data storage falling at an annual rate of 35% per year over the last thirty years (Micklethwait and Wooldridge, 2005), the company needed to update and launch new technologically superior products in order to survive in a competitive marketplace such as the Tier one automotive market. As Henke and Zhang (2010) observe customer driven innovation can be structured as win-win propositions – if products are appropriately priced.

Pricing Options

The company has several options with respect to pricing its products. One option is to utilize target costing where the market determines the price. Cost plus pricing is another option often used in the automotive supplier industry (Zirpoli and Caputo, 2002). Cost plus pricing adds a premium to the calculated cost of a product. A final option is variable cost pricing. Under variable cost pricing, a premium to cover fixed costs and profit is added to the products variable cost.

Case Requirements

- 1) Utilizing information in the case and in Exhibit B determine the breakeven quantity of units for each product. Also determine residual income for each product. What are the implications of your analysis? Assume that non-traceable fixed costs, both manufacturing and non-manufacturing are allocated to the various products based on total revenue.
- 2) Determine multiproduct breakeven. Assume the same ratio of sales as provided in Exhibit B. Perform the calculation without the new product TPB. What are the implications of your analysis?
- 3) Utilize the concepts of Incremental Analysis to evaluate discontinuing the new product TPB. What do the results of your analysis imply? What qualitative factors should be considered in such a decision? Assume that all of the traceable fixed costs are avoidable and that none of the non-traceable fixed costs will change.
- 4) With respect to Question 3 – potentially discontinuing the new product TPB what do you recommend and why? What role does the considerable effort in time and investment the company has invested in developing the new product play in the continue/discontinue decision? What role if any do qualitative factors play in the decision?
- 5) Determine an appropriate target cost. At the existing sales price of \$ 140 per unit, determine the target cost. Assume the company requires a minimum return on sales of 30%. Based on existing costs do you think this target cost is feasible? Utilize information contained in the Exhibits to answer this question.
- 6) Calculate the cost of each product using cost plus pricing and a 50% markup.
- 7) Calculate the cost of each product using variable costing and a 75% markup.
- 8) What pricing strategy do you recommend the company adopt and why? Show calculations and included recommended prices for each product.

APPENDIX

Exhibit A

Total Manufacturing Cost per Unit

Overhead applied using:	X1	X2	LC1	TPB
Direct Labor Hours as only cost driver	48.71	46.35	46.42	56.16
Machine Hours as only cost driver	48.04	48.58	65.63	82.37
Activity Based Costing	42.10	42.41	51.00	221.89

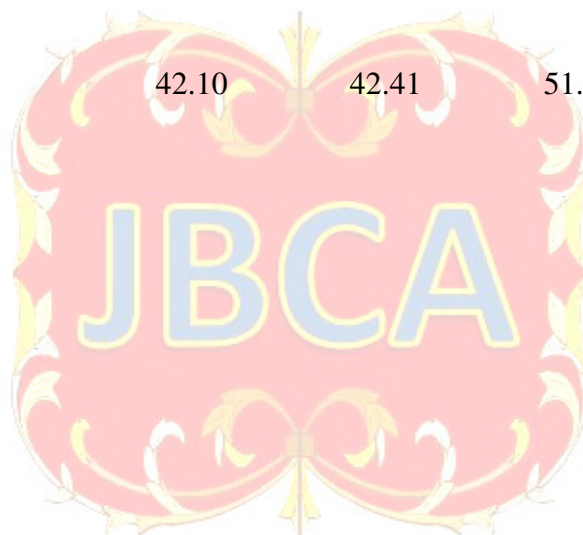


Exhibit B

Information for cost volume profit analysis					
Product	X1	X2	LC1	TPB	Totals
Sales Price per unit	64.00	65.50	80.00	140.00	
Unit Sales	80,000	160,000	50,000	10,000	
Direct Materials per unit	12.62	12.62	14.90	51.06	
Direct Labor per unit	3.90	4.12	4.34	26.48	
Variable Manufacturing Overhead per unit	25.58	25.67	31.76	110.35	
Variable Selling and administrative per unit	0.85	0.85	2.30	11.20	
Traceable Fixed Manufacturing Overhead				340,000	
Fixed Manufacturing Overhead	1,932,500				
Fixed Selling and administrative	1,420,000				
Total Revenue	5,120,000	10,480,000	4,000,000	1,400,000	21,000,000
Variable Costs	3,436,000	6,921,600	2,665,000	1,990,900	15,013,500
Fixed costs					3,692,500
Operating Income					2,294,000

Exhibit C

Product Line Contribution Margin Income Information

Product	X1	X2	LC1	TPB	Totals
Revenue	5,120,000	10,480,000	4,000,000	1,400,000	21,000,000
Variable Manufacturing Costs	3,368,000	6,785,600	2,550,000	1,878,900	14,582,500
Variable Sales & Admin Costs	68,000	136,000	115,000	112,000	431,000
Contribution Margin	1,684,000	3,558,400	1,335,000	(590,900)	5,986,500
Fixed Manufacturing Costs-traceable	0	0	0	340,000	340,000
Performance Margin	1,684,000	3,558,400	1,335,000	(930,900)	5,646,500
Fixed Manufacturing Costs-allocated	471,162	964,410	368,095	128,833	1,932,500
Fixed Sales & Admin Costs	346,210	708,648	270,476	94,667	1,420,000
Operating Income	866,629	1,885,343	696,429	(1,154,400)	2,294,000

References

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