ACCT 6273: Identifying Strategic Implications in Accounting Data

Professor Marjorie Platt

Northeastern University

Summer 3 2017

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Table of Contents

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9-198-005

REV: MARCH 25, 2005

WILLIAM BRUNS

Lille Tissages, S.A.

Early in 2004, the marketing director and the finance director of Lille Tissages, S.A. met to prepare a joint pricing recommendation for Item 345. After the managing director had approved their recommendation, the company would announce the price in letters to its customers. In accordance with company and industry practice, announced prices were adhered to for the year unless radical changes in the market had occurred.

Lille Tissages was located in Lille, France. It was the largest company in its segment of the French textile industry; its 2003 sales had exceeded FF96 million. Company salesmen were on a straight salary basis, and each salesman sold the full line. Most of Lille Tissages' competitors were small. Usually, they waited for Lille Tissages to announce prices before mailing out their own price lists.

Item 345, an expensive yet competitive fabric, was the sole product of a department whose facilities could not be utilized on other items in the product line. In January 2002, Lille Tissages had raised its price from FF15 to FF20 a meter. This had been done to bring the profit per meter on Item 345 up to that of other products in the line. Although the company was in a strong position financially, it would require considerable capital in the next few years to finance a recently approved long-term modernization and expansion program. The 2002 pricing decision had been one of several changes advocated by the directors in an attempt to strengthen the company's working capital position so as to insure that adequate funds would be available for this program.

Competitors of Lille Tissages had held their prices on products similar to Item 345 at FF15 during 2002 and 2003. The industry and Lille Tissages volume for Item 345 for the years 1998-2003, as estimated by the sales director, are shown in **Exhibit 1**. As shown by this exhibit, Lille Tissages had lost a significant portion of its former market position. In the sales director's opinion, a reasonable forecast of industry volume for 2004 was 700,000 meters. He was certain that the company could sell 25% of the 2004 industry total if it adopted the FF15 price. He feared a further volume decline if it did not meet the competitive price. As many consumers were convinced of the superiority of the Lille Tissages product, the sales director reasoned that sales of Item 345 would probably not fall below 75,000 meters, even at a FF20 price.

During the pricing discussions, the finance director and the marketing director had considered two other aspects of the problem. The finance director was concerned about the possibility that competitors would reduce their prices below FF15 if Lille Tissages announced a FF15 price for Item 345. The marketing director was confident that competitors would not go below FF15 because they

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all had higher costs and several of them were in tight financial straits. He believed that action taken on Item 345 would not have had any substantial repercussions on other items in the line.

The finance director prepared estimated costs of Item 345 at various volumes of production (see **Exhibit 2**). These estimated costs reflected projected labor and material costs. They were based on past experience except for the estimates of 75,000 and 100,000 meters. The company had produced more than 100,000 meters in each of the last ten years, and earlier experience was not applicable because of equipment changes and increases in labor productivity.

Questions

1. Should Lille Tissages lower the price to FF15? (Assume no intermediate prices are being considered.)

2. If the department that produces Item 345 was a profit center and if you were the manager of that department, would it be to *your* financial advantage to lower the price?

3. Is there any possibility that competition might raise their prices if Lillie Tissages maintains its price of FF20? If so, how do you take this factor into your analysis?

4. At FF15, will Lille Tissages earn a profit on Item 345? How do you decide?

Exhibit 1 Item 345, Prices and Production, 1998-2003

	Volume of Production (meters)		Price (French francs)	
Year	Industry Total	Lille Tissages	Charged by Most Competitors	Lille Tissages
1998	610,000	213,000	20.00	20.00
1999	575,000	200,000	20.00	20.00
2000	430,000	150,000	15.00	15.00
2001	475,000	165,000	15.00	15.00
2002	500,000	150,000	15.00	20.00
2003 (est.)	625,000	125,000	15.00	20.00

Exhibit 2 Estimated Cost per Meter of Item 345 at Various Volumes of Production (in French francs)

	75,000	100,000	125,000	150,000	175,000	200,000
Direct labor[a]	4.00	3.90	3.80	3.70	3.80	4.00
Material	2.00	2.00	2.00	2.00	2.00	2.00
Material spoilage	.20	.20	.19	.19	.19	.20
Department expense:						
Direct[b]	.60	.56	.50	.50	.50	.50
Indirect[c]	4.00	3.00	2.40	2.00	1.71	1.50
General overhead[d]	1.20	1.17	1.14	1.11	1.14	1.20
Factory cost	12.00	10.83	10.03	9.50	9.34	9.40
Selling & administrative expense[e]	7.80	7.04	6.52	6.18	6.07	6.11
Total Cost	19.80	17.87	16.55	15.68	15.41	15.51

[a]Any workers made redundant as a result of a decrease in the volume of sales of Item 345 could be economically absorbed in other departments.

[b]Indirect labor, supplies, repairs, powers, etc.

[c]Depreciation, supervision, etc.

[c]Thirty percent of direct labor, consisting principally of general plant administrative costs (plant supervision, plant services, etc.) and occupancy costs

[e]Sixty-five percent of factory cost.

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9-104-086

REV: NOVEMBER 1, 2005

WILLIAM J. BRUNS, JR.

JULIE HERTENSTEIN

Salem Telephone Company

In April 2004, Peter Flores, president of Salem Telephone Company, was preparing for a meeting with Cynthia Wu, manager of Salem Data Services. An agreement with the state Public Service Commission had permitted Salem Telephone to establish Salem Data Services, a computer data service subsidiary, to perform data processing for the telephone company and to sell computer service to other companies and organizations. It was necessary for these two companies to be separate because Salem Telephone was a regulated utility, and Salem Data Services was an unregulated company. Flores had told the Public Service Commission in 2000 that a profitable computer service subsidiary would reduce pressure for telephone rate increases. However, by the end of 2003 Salem Data Services had yet to experience a profitable month. Wu felt the business was progressing well and only more time was needed until Salem Data Services showed a profit, but Flores felt action was necessary to reduce the drain on Salem Telephone Company resources.

Salem Data Services had grown out of the needs of Salem Telephone for computer services to plan, control, and account for its operations in the metropolitan region it served. However, when Salem Telephone management realized that other businesses in the metropolitan region needed similar services and that centralized service could be provided over telephone circuits, they suggested that Salem Telephone could sell computer time not needed by telephone operations. In addition, the state Public Service Commission had encouraged all public utilities under its jurisdiction to seek new sources of revenue and profits to reduce the need for rate increases that higher costs would otherwise bring.

Because it operated as a regulated public utility, Salem Telephone Company could not change its rates for telephone service without the approval of the Public Service Commission. In presenting the proposal for the new subsidiary, Flores had argued for a separate but wholly owned company whose prices for service would not be regulated. In this way, Salem Data Services could compete with other computer service organizations in a dynamic field. The commission accepted this proposal subject only to the restriction that the average monthly charges for services provided by Salem Data Services to Salem Telephone not exceed $82,000, the estimated cost of equivalent services used by Salem Telephone Company in 2000. To maintain the separation between Salem Telephone and its unregulated subsidiary, all accounts of Salem Data Services were separated from those of Salem Telephone and each paid the other for services received from the other.

Professor Emeritus William J. Bruns, Jr. prepared the original version of this case, "Prestige Telephone Company," HBS Case No. 197-097. This version was prepared by Professor Emeritus William J. Bruns, Jr. and Professor Julie Hertenstein, Northeastern University. HBS cases are developed solely as the basis for class discussion. The company mentioned in the case is fictional. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

Salem Data Services started operations in 2001, and as was typical for most start-ups, there had been some problems. Equipment deliveries were delayed. Personnel had commanded higher salaries than expected. And most important, customers were harder to find than earlier estimates had led the company to expect. By the end of 2003, most of these problems had been overcome.

In 2003, the income of Salem Telephone was so low that the report to shareholders revealed the lowest return on investment in seven years. At that time, Flores felt it was necessary to reassess Salem Data Services. Wu had asked for more time, as she felt Salem Data Services would be profitable by March. But when the quarterly reports came (**Exhibits 1** and **2**), Flores called Wu to arrange their meeting.

Flores received two reports on the operations of Salem Data Services. The summary of computer utilization in **Exhibit 1** shows the hours of computer time that were available and how they were used. Computer service was offered to commercial customers 24 hours a day on weekdays and eight hours on Saturdays. An outside contractor who took the computer off-line for eight hours each week for testing provided routine maintenance of the computers and upkeep during the weekend shifts not used for commercial customers. The reports for the quarter revealed a persistent problem: the hours still available to sell (as shown **in Exhibit 1**) that did not provide revenue remained high.

Revenue and cost data were summarized in the quarterly report on results of operations (**Exhibit 2**). Intracompany work was billed at $400 per hour, a rate based on usage estimates for 2001 and the Public Service Commission's restrictions that cost to Salem Telephone should not exceed an average of $82,000 per month. Commercial sales were billed at $800 per hour.

While most expenses summarized in the report were self-explanatory, Flores reminded himself of the characteristics of a few. Space costs were all paid to Salem Telephone. Salem Data Services rented the ground floor of a central exchange building owned by Salem Telephone for $8,000 per month. In addition, Salem Data Services paid a charge for custodial service based on Salem Telephone's estimated annual cost per square foot, as telephone personnel provided these services.

Computer equipment had been acquired by lease and by purchases; leases had four years to run and were noncancelable. Owned equipment was all salable but probably could not bring more than its book value in the used-equipment market.

Wages and salaries were separated in the report to show the expense of five different kinds of activities. Operations salaries included those of the six people necessary to run the center around the clock; in addition there were operations wages paid hourly workers who were required when the computer was in operation. Salaries of the programming staff that provided service to clients and maintained the operating system were reported as system development and maintenance. Sales personnel, who called upon and serviced present and prospective commercial clients, were also salaried, as were the administrators of Salem Data Services.

Because of its relationship with Salem Telephone, Salem Data Services was able to avoid many costs an independent company would have. For example, telephone company personnel did all payroll, billing, collections, and accounting. For those items shown in **Exhibit 2** as corporate services, Salem Data Services paid Salem Telephone an amount based on factors such as total wages and salaries, total accounts receivable, and the number of past-due accounts.

Finally, sales promotion was the amount that the managers chose to spend on advertising and the other promotional activities that they used to inform prospective clients of their services and to support the activities of their sales personnel. This amount was not related to the current level of work but instead depended on how much they estimated they needed to spend to acquire new

clients. Salem Data Services managers believed that this expense would remain at least at the level it was in March, although they were evaluating whether higher expenditures were warranted.

Although Flores was discouraged by results to date, he was reluctant to suggest to Wu that Salem Data Services be closed down or sold. He thought that the opportunity to have this subsidiary just seemed too good to give up easily. Besides, he was not sure that the accounting report really revealed the contribution that Salem Data Services was making to Salem Telephone. In other situations he had reviewed in the past, he felt that the procedures used in accounting for separate activities in the company tended to obscure the costs and benefits they provided.

After examining the reports briefly, Flores resolved to study them in preparation for asking Wu to estimate the possible effects on profits of increasing the price to customers other than Salem Telephone, reducing prices, and increasing sales efforts.

Questions

1. "Revenue hours" represent the key activity that drives costs at Salem Data Services. Which expenses in **Exhibit 2** are variable with respect to revenue hours? Which expenses are fixed with respect to revenue hours?

2. For each expense that is variable with respect to revenue hours, calculate the cost per revenue hour.

3. Create a contribution margin income statement for Salem Data Services. Assume that intra-company usage is 205 hours. Assume commercial usage is at the March level.

4. Assuming the intracompany demand for service will average 205 hours per month, what level of ***commercial revenue hours*** of computer use would be necessary to break even each month?

   Since the intracompany demand is known to be 205 hours, the contribution from these sales is assured to cover a portion of the fixed costs. Thus, to determine the level of commercial revenue hours required to break even, the contribution from commercial sales only needs to cover the fixed costs remaining after subtracting the fixed costs already covered by the contribution from intracompany sales.

5. Estimate the effect on income of each of the options Flores has suggested if Wu estimates as follows:

   - Increasing the price to commercial customers to $1,000 per hour would reduce demand by 30%.

   - Reducing the price to commercial customers to $600 per hour would increase demand by 30%.

   - Increased promotion would increase revenue hours by up to 30%. Wu is unsure how much promotion this would take. (How much could be spent and still leave Salem Data Services with no reported loss each month if commercial hours were increased 30%?)

6. Based on your analysis above, is Salem Data Services really a problem to Salem Telephone Company? What should Flores do about Salem Data Services?

Exhibit 1 Salem Data Services Summary of Computer Utilization, First Quarter 2004

	January	February	March
Number of weekdays (M–F)	22	20	23
X 24 hours per day	528	480	552
Number of Saturdays	5	4	4
X 8 hours per day	40	32	32
Total hours available for revenue	568	512	584
Revenue hours			
Intracompany	206	181	223
Commercial	123	135	138
Total revenue hours	329	316	361
Hours available to sell	239	196	223

Source: Casewriter.

Exhibit 2 Salem Data Services Summary Results of Operations, First Quarter 2004

	January	February	March
Revenues			
Intracompany sales	$82,400	$72,400	$89,200
Commercial sales	98,400	108,000	110,400
Total revenue	$180,800	$180,400	$199,600
Expenses			
Space costs:			
Rent	$8,000	$8,000	$8,000
Custodial services	1,240	1,240	1,240
	9,240	9,240	9,240
Equipment costs			
Computer leases	95,000	95,000	95,000
Maintenance	5,400	5,400	5,400
Depreciation:			
Computer equipment	25,500	25,500	25,500
Office equipment and fixtures	680	680	680
Power	1,546	1,485	1,697
	128,126	128,065	128,277
Wages and salaries			
Operations: salaried staff	21,600	21,600	21,600
Operations: hourly personnel	7,896	7,584	8,664
Systems development and maintenance	12,000	12,000	12,000
Administration	9,000	9,000	9,000
Sales	11,200	11,200	11,200
	61,696	61,384	62,464
Sales promotion	7,909	7,039	8,083
Corporate services	15,424	15,359	15,236
Total expenses	$222,395	$221,087	$223,300
Net income (loss)	$(41,595)	$(40,687)	$(23,700)

Source: Casewriter.

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9-101-092
REV: AUGUST 5, 2003

ROBERT S. KAPLAN

Wilkerson Company

The decline in our profits has become intolerable. The severe price cutting in pumps has dropped our pre-tax margin to less than 3%, far below our historical 10% margins. Fortunately, our competitors are overlooking the opportunities for profit in flow controllers. Our recent 10% price increase in that line has been implemented without losing any business.

Robert Parker, president of the Wilkerson Company, was discussing operating results in the latest month with Peggy Knight, his controller, and John Scott, his manufacturing manager. The meeting among the three was taking place in an atmosphere tinged with apprehension because competitors had been reducing prices on pumps, Wilkerson's major product line. Since pumps were a commodity product, Parker had seen no alternative but to match the reduced prices to maintain volume. But the price cuts had led to declining company profits, especially in the pump line (summary operating results for the previous month, March 2000, are shown in **Exhibits 1 and 2**).

Wilkerson supplied products to manufacturers of water purification equipment. The company had started with a unique design for valves that it could produce to tolerances that were better than any in the industry. Parker quickly established a loyal customer base because of the high quality of its manufactured valves. He and Scott realized that Wilkerson's existing labor skills and machining equipment could also be used to produce pumps and flow controllers, products that were also purchased by its customers. They soon established a major presence in the high-volume pump product line and the more customized flow controller line.

Wilkerson's production process started with the purchase of semi-finished components from several suppliers. It machined these parts to the required tolerances and assembled them in the company's modern manufacturing facility. The same equipment and labor were used for all three product lines, and production runs were scheduled to match customer shipping requirements. Suppliers and customers had agreed to just-in-time deliveries, and products were packed and shipped as completed.

Valves were produced by assembling four different machined components. Scott had designed machines that held components in fixtures so that they could be machined automatically. The valves were standard products and could be produced and shipped in large lots. Although Scott felt several competitors could now match Parker's quality in valves, none had tried to gain market share by cutting price, and gross margins had been maintained at a standard 35%.

Professor Robert S. Kaplan wrote this updated version of "Destin Brass Products Co.," HBS No. 190-089, prepared by Professor William J. Bruns, Jr. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

The manufacturing process for pumps was practically identical to that for valves. Five components were machined and then assembled into the final product. The pumps were shipped to industrial product distributors after assembly. Recently, it seemed as if each month brought new reports of reduced prices for pumps. Wilkerson had matched the lower prices so that it would not give up its place as a major pump supplier. Gross margins on pump sales in the latest month had fallen below 20%, well below the company's planned gross margin of 35%.

Flow controllers were devices that controlled the rate and direction of flow of chemicals. They required more components and more labor, than pumps or valves, for each finished unit. Also, there was much more variety in the types of flow controllers used in industry, so many more production runs and shipments were performed for this product line than for valves. Wilkerson had recently raised flow controller prices by more than 10% with no apparent effect on demand.

Wilkerson had always used a simple cost accounting system. Each unit of product was charged for direct material and labor cost. Material cost was based on the prices paid for components under annual purchasing agreements. Labor rates, including fringe benefits, were $25 per hour, and were charged to products based on the standard run times for each product (see **Exhibit 3**). The company had only one producing department, in which components were both machined and assembled into finished products. The overhead costs in this department were allocated to products as a percentage of production-run direct labor cost. Currently, the rate was 300%. Since direct labor cost had to be recorded anyway to prepare factory payroll, this was an inexpensive way to allocate overhead costs to products.

Knight noted that some companies didn't allocate any overhead costs to products, treating them as period, not product, expenses. For these companies, product profitability was measured at the contribution margin level – price less all variable costs. Wilkerson's variable costs were only its direct material and direct labor costs. On that basis, all products, including pumps, would be generating substantial contribution to overhead and profits. She thought that perhaps some of Wilkerson's competitors were following this procedure and pricing to cover variable costs.

Knight had recently led a small task force to study Wilkerson's overhead costs since they had now become much larger than the direct labor expenses. The study had revealed the following information:

1. Workers often operated several of the machines simultaneously once they were set up. For other operations, however, workers could operate only one machine. Thus machine-related expenses might relate more to the machine hours of a product than to its production-run labor hours.

2. A set-up had to be performed each time a batch of components had to be machined in a production run. Each component in a product required a separate production run to machine the raw materials or purchased part to the specifications for the product.

3. People in the receiving and production control departments ordered, processed, inspected, and moved each batch of components for a production run. This work required about the same amount of time whether the components were for a long or a short production run, or whether the components were expensive or inexpensive.

4. The work in the packaging and shipping area had increased during the past couple of years as Wilkerson increased the number of customers it served. Each time products were packaged and shipped, about the same amount of work was required, regardless of the number of items in the shipment.

Knight's team had collected the data shown in **Exhibit 4** based on operations in March 2000. The team felt that this month was typical of ongoing operations. Some people recalled, however, that when demand was really heavy last year, the machines had worked 12,000 hours in a month and the factory handled up to 180 production runs and 400 shipments without experiencing any production delays or use of overtime.

Exhibit 1 Wilkerson Company: Operating Results (March 2000)

Sales		$2,152,500	100%
Direct Labor Expense		271,250	
Direct Materials Expense		458,000	
Manufacturing overhead			
Machine-related expenses	$336,000		
Setup labor	40,000		
Receiving and production control	180,000		
Engineering	100,000		
Packaging and shipping	150,000		
Total Manufacturing Overhead		806,000	
Gross Margin		$617,250	29%
General, Selling & Admin. Expense		559,650	
Operating Income (pre-tax)		$ 57,600	3%

Exhibit 2 Product Profitability Analysis (March 2000)

	Valves	Pumps	Flow Controllers
Direct labor cost	$10.00	$12.50	$10.00
Direct material cost	16.00	20.00	22.00
Manufacturing overhead (@300%)	30.00	37.50	30.00
Standard unit costs	$56.00	$ 70.00	$ 62.00
Target selling price	$86.15	$107.69	$95.38
Planned gross margin (%)	35%	35%	35%
Actual selling price	$86.00	$87.00	$105.00
Actual gross margin (%)	34.9%	19.5%	41.0%

Exhibit 3 Product Data

Product Lines	Valves	Pumps	Flow Controllers
Materials per unit	4 components	5 components	10 components
	2 @ $2 = $ 4	3 @ $2 = $ 6	4 @ $1 = $ 4
	2 @ 6 = 12	2 @ 7 = 14	5 @ 2 = 10
			1 @ 8 = 8
Materials cost per unit	$16	$20	$22
Direct labor per unit	.40 DL hours	.50 DL hours	.40 DL hours
Direct labor $/unit @ $25/DL hour (including employee benefits)	$10	$12.50	$10.00
Machine hours per unit	0.5	0.5	0.3

Exhibit 4 Monthly Production and Operating Statistics (March 2000)

	Valves	Pumps	Flow Controllers	Total
Production (units)	7,500	12,500	4,000	24,000
Machine hours	3,750	6,250	1,200	11,200
Production runs	10	50	100	160
Number of shipments	10	70	220	300
Hours of engineering work	250	375	625	1,250

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9-191-056
REV: MAY 17, 2004

WILLIAM J. BRUNS, JR.

Mile High Cycles

In 2005, Bob Moyer was reviewing production costs for Mile High Cycles. Located in Denver, Colorado, the company sold very high-quality, handcrafted mountain bikes to bicycle retailers throughout the country. Sales for the company were $13 million that year.

Bob Moyer had been an avid cyclist in college, racing for the Stanford University cycling team while completing his degree in mechanical engineering. After working for a few years as a design engineer for a company in Denver, Bob decided to start his own business. As a hobby, he had designed and built several prototypes of a mountain bike, which had been enthusiastically received by his mountain-biking friends. Approaching several friends and relatives for start-up money, Mile High Cycles was founded in 2003.

A mountain bike was a bicycle with 15 to 21 speeds, designed and built to take the punishment of riding on dirt trails and roads. The bikes were first made by avid cyclists who customized their 10-speed road bikes in order to ride on mountain trails and dirt roads. Some with framebuilding experience began to experiment making their own frames in order to handle better the additional demands of off-road riding. By 1992, several small companies had emerged selling bicycles specifically designed for riding under these conditions.

During the rest of the 1990s, mountain bikes had taken off in popularity, not only for use off-road but also for use in the city, where their sturdy construction could withstand the pounding from potholes and curbs. In addition, many casual cyclists preferred the mountain bike's more upright riding position in comparison to that of the hunched position of the 10-speed road bike. Sales of all bicycles in the United States had declined in 2003. However, over the same time period, sales of mountain bikes increased to more than 2.0 million units.

Bob Moyer had planned to produce 10,000 bikes in 2004, all of one model. Operations at Mile High Cycles consisted of three departments: frames, wheel assembly, and final assembly. In frames, steel tubing was cut to length for the components of the frame. Then the pieces were carefully welded together to form the completed frameset. This part of the process was quite time-consuming, requiring frequent inspection and measurement to ensure that the frameset was aligned perfectly. After welding, the frame was painted in one of 10 different color schemes and prepared for final assembly.

In wheel assembly, front and rear wheels were assembled from their key components: hubs, spokes, and rims. All of the components were purchased from an outside supplier. Mile High Cycles

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Professor William J. Bruns, Jr. and David J. Ellison prepared this case. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

used a high-quality automatic lacing and truing machine to build its wheels. This machine would lace the spokes between the hub and rim and then automatically tighten the spokes to the appropriate tension. The machine was quite precise but would occasionally damage spokes during the insertion process. In such a case, the operator would replace any damaged parts and restart the machine. Each wheel would also be inspected and trued by hand in order to insure that the wheels were in perfect alignment.

In final assembly, the frame and wheels were combined with other purchased parts to create the final package that would then be shipped to bicycle dealers. In this area, the front fork and many other key components were attached to the frame, and the inner tubes and tires were mounted on the wheels. In order to minimize damage while shipping, some of the bicycles' components were left packaged for the bicycle dealer to assemble before selling the bike to the final customer. All of the components were purchased from outside suppliers and then were combined to form kits for the bicycles. Mile High Cycles carried an inventory of spare parts to replace any parts damaged during assembly or shipping, although such replacement was quite infrequent.

In reviewing his costs, Bob noted that he had produced 10,800 bicycles in 2004, 800 more than planned. Bob thought that operations during the year had done well to meet the additional demand, but he wondered if Mile High Cycles was doing a good job in managing its costs. **Exhibit 1** shows the planned material, labor, and overhead costs for 2004. **Exhibit 2** shows the actual material, labor, and overhead costs for that year.

Questions

1. Determine the direct cost and overhead variances. What might be causing each of the variances to occur?

2. Should Bob Moyer be concerned about Mile High Cycles's performance? Where should he be prepared to direct his attention? What additional information should he try to obtain?

3. Are there any purposes for which a total, per unit variance would be more useful than a series of functional variances? If so, for what?

Exhibit 1 2004 Production Budget

Budget based on 10,000 bicycles production

Frame assembly:

Steel tubing	$ 3,300,000	(110,000 lbs. @ $30.00/lb.)
Paint	25,000	(1,250 gals. @ $20.00/gal.)
Labor	$ 1,500,000	(100,000 hrs. @ $15.00/hr.)
Total frame	$ 4,825,000	

Wheel assembly:

Parts	$ 1,200,000	(10,000 kits @ $120.00/kit)
Labor	65,000	(5,000 hrs. @ $13.00/hr.)
Total wheel	$ 1,265,000	

Final assembly:

Parts	$ 3,500,000	(10,000 kits @ $350.00/kit)
Labor	105,000	(7,500 hrs. @ $14.00/hr.)
Total final assembly	$ 3,605,000	

Overhead costs:

Rent	$ 250,000	
Office staff	100,000	
Depreciation	100,000	
Other costs	750,000	(estimated to be 2/3 variable)
Total overhead	$ 1,200,000	
Total Annual Costs	$10,895,000	

Exhibit 2 2004 Production Costs

Actual production: 10,800 bicycles

Frame assembly:		
Steel tubing	$ 3,572,100	(113,400 lbs. @ $31.50/lb.)
Paint	28,187	(1,375 gals. @ $20.50/gal.)
Labor	$ 1,528,050	(100,200 hrs. @ $15.25/hr.)
Total frame	$ 5,128,337	
Wheel assembly:		
Parts	$ 1,317,600	(10,800 kits @ $122.00/kit)
Rework parts	25,000	(spokes and rims)
Labor	74,250	(5,500 hrs. @ $13.50/hr.)
Total wheel	$ 1,416,850	
Final assembly:		
Parts	$ 3,963,600	(10,800 kits @ $367.00/kit)
Rework parts	45,000	(miscellaneous parts)
Labor	116,000	(8,000 hrs. @ $14.50/hr.)
Total final assembly	$ 4,124,600	
Overhead costs:		
Rent	$ 250,000	
Office staff	100,000	
Depreciation	100,000	
Other costs	850,000	
Total overhead	$ 1,300,000	
Total Annual Costs	$11,969,787	

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