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*I don't get it. I've got a nifty new product proposal that can't help but make money, and top management turns thumbs down. No matter how we price this new item, we expect to make at least \$180,000 on it pretax. That would contribute over ten cents per share to our earnings after taxes, which is more than the nine cent earnings-per-share increase in 1991 that the president made such a big thing about in the shareholders' annual report. It just doesn't make sense for the president to be touting earnings per share while his subordinates are rejecting profitable project like this one.*

The frustrated speaker was Sarah McNeil, product development manager of the Consumer Products Division of Wellesley Industries, Inc. Wellesley was a relatively young company, which had grown rapidly to its 1991 sales level of over \$74 million. (See Exhibits 1 and 2 for financial data for 1990 and 1991).

Wellesley had three divisions - Consumer Products, Industrial Products, and Professional Services - each of which accounted for about one third of Wellesley's total sales. Consumer Products, the oldest of the three divisions, designed, manufactured, and marketed a line of housewares items, primarily for use in the kitchen. The Industrial Products Division built one-of-a-kind machine tools to customer specifications (i.e., it was a large "job shop"), with the typical job taking several months to complete. The Professional Services Division, the newest of the three, had been added to Wellesley by acquiring a large firm that provided land planning, landscape architecture, structural architecture, and consulting engineering services. This division has grown rapidly, in part because of its capability to perform "environmental impact" studies, as required by law on many new land development projects.

Because of the differing nature of their activities, each division was treated as an essentially independent company. There were only a few Corporate-level managers and staff people, whose job was to coordinate the activities of the three divisions. One aspect of this coordination was that all new project proposals requiring investment in excess of \$500,000 had to be reviewed by the corporate vice president of finance, Henry Hubbard. It was Hubbard who had recently rejected McNeil's new product proposal, the essentials of which are shown in Exhibit 3.

## Performance Evaluation

Prior to 1990, each division had been treated as a profit center, with annual division profit budgets negotiated



between the president and the respective division general managers. In 1989 Wellesley's president, Carl Randall, had become concerned about high interest rates and their impact on the company's profitability. At the urging of Henry Hubbard, Randall had decided to begin treating each division as an investment center, so as to be able to relate each division's profit to the assets the division used to generate its profits.

Starting in 1990, each division was measured as based on its return on assets, which was defined to be the division's net income divided by its total assets. Net income for a division was calculated by taking the division's "direct income before taxes," then subtracting the division's share of corporate administrative expenses (allocated on the basis of divisional revenues) and its share of income tax expense (the tax rate applied to the division's "direct income before taxes" after subtraction of the allocated corporate administrative expenses). Although Hubbard realized there were other ways to define a division's income, he and the president preferred this method since "it made the sum of the [divisional] parts equal to the [corporate] whole."

Similarly, Wellesley's total assets were subdivided among three divisions. Since each division operated in physically separate facilities, it was easy to attribute most assets, including receivables, to specific divisions. The corporate-office assets, including the centrally controlled cash account, were allocated to the divisions on the basis of divisional revenues. All fixed assets were recorded at their balance sheet values - that is, original cost less accumulated straight-line depreciation. Thus, the sum of the divisional assets was equal to the amount shown on the corporate balance sheet.

In 1989, Wellesley had as its return on year-end assets (net income divided by total assets) a rate of 3.8 percent. According to Hubbard, this corresponded to a "gross return" of 9.3 percent; he defined gross return as equal to earnings before interest and taxes ("EBIT") divided by assets. Hubbard felt that a company like Wellesley should have a gross (EBIT) return on assets of at least 12 percent, especially given the interest rates the corporation had to pay on its recent borrowings. He, therefore, instructed each division manager that the division was to try to earn a gross return of 12 percent in 1990 and 1991. In order to help pull

the return up to this level, Hubbard decided that new investment proposals would have to show a return of at least 15 percent in order to be approved.

### 1990 and 1991 Results

Hubbard and Randall were moderately pleased with 1990 results. The year was a particularly difficult one for some of Wellesley's competitors, yet Wellesley had managed to increase its return on assets from 3.82 percent to 5.38 percent, and its gross return from 8.38 percent to 9.87 percent.

At the end of 1990 the president put pressure on the general manager of the Industrial Products Division to improve its return on investment, suggesting that this division was not carrying its share of the load. The division manager had bristled at this comment, saying the division could get a higher return "if we had lot of old machines the way Consumer Products does." The president had responded that he did not understand the relevance of the division manager's remark, adding, "I don't see why the return on an old asset should be higher than that on a new asset, just because the old one cost less."

The 1991 results both disappointed and puzzled Carl Randall. Return on assets fell from 5.38 percent to 5.06 percent, and gross return dropped from 9.87 percent to 9.55 percent. At the same time, return on sales (net income divided by sales) rose from 4.69 percent to 5.01 percent, and return on owners' equity also increased, from 10.08 percent to 10.40 percent. The Professional Services Division easily exceeded the 12 percent gross return target; Consumer Products' gross return on assets was 10.8 percent; but Industrial Products' return was only 7.0 percent (see Exhibit 4). These results prompted Randall to say the following to Hubbard:

*You know, Henry, I've been a marketer most of my career; but, until recently, I thought I understood the notion of return on investment. Now I see in 1991 our profit margin was up and our earnings per share were up; yet two of your return on investment figures were down; return on invested capital held constant, and return on owners' equity went up. I just don't understand these discrepancies.*

Moreover, there seems to be a lot more tension among our managers the last two years. The general manager of professional Services seems to be doing a good job, and she's happy as a lark about the praise I've given her. But the general manager of Industrial Products looks daggers at me every time we meet. And last week, when I was eating lunch with the division manager at Consumer Products, the product development manager came over to our table really burned by ears over a new product proposal of hers you rejected the other day. I'm wondering if I should follow up on the idea that

Karen Kraus in Personnel brought back from the two-day organization development workshop she attended over at the university. She thinks we ought to have a one-day off-site "retreat" of all the corporate and divisional managers to talk over this entire return on investment matter.

### Questions

1 What does Sarah McNeil mean when she claims, (See items 2 and 3 in exhibit 3.) No matter how we price this new item, we expect to make at least \$180,000 on it pretax.

2 What would the break-even analysis look like for each of the three pricing strategies?

3 Item 1 in exhibit 3 provides the investment for the lowest price strategy. Compute the investment required for the other two strategies?

4 What is the gross return ( $= f(\text{EBIT}, \text{Assets})$ ) on the new project for each of the three strategies? (Where EBIT is earnings before interest and taxes.) Does it change over the life of the project? Does this matter?

5 Think of as many different accounting measures as you can to evaluate projects and new products. While Wellesley uses gross return, Sarah mentions the effect on earnings per share, and Randall wonders about return on equity, return on sales, and return on assets. Presumably, the decision rule is to select the project if the values for these measures exceed a certain minimum. Compute values for these four measures for this project for the three strategies. Also compute the following measures over the life of the project for only for the highest price option even if it is not your preferred price. Show also the DuPont analysis

Return on Equity  
Return on Investment  
Residual Income (EVA) for Equity  
Present value of the above  
Residual Income (EVA) for the firm  
Present value of the above

To compute these measures, you need some critical ratios. Try to derive them first. Whatever values you get, in all your computations use the following numbers for these ratios:

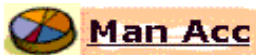
Cost of debt [interest rate]	10.00%
Equity to total capitalization ratio [i.e. debt / equity = 1/3]	75.00%
Tax rate	40.00%
Stock issue price per share	\$43.00
Cost of equity (after income taxes)	15.00%

6 Rather than use an accounting measure to

evaluate this project, we might like to use discounted cash flows. Two questions arise: what are the cash flows (as opposed to earnings numbers) and what is the correct discount rate to be used to present value those cash flows? Compute the net present value for this project for all three strategies.

7 From the perspective of each of the three divisions, how do you feel about the return on assets measure? That is, can you think of inequities that might arise? Compute the divisional return on assets for each division.

8 In the earlier questions you evaluated a number of measures in terms of their usefulness as measures of project profitability. Now consider each of those measures in terms of their ability to evaluate divisional performance. Should the same measure be used to evaluate projects and investment centers?



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**Exhibit 1 Income Statements**

In thousands	Year ended December 31,		1991	1990
Sales			74,225	70,731
Cost of goods sold			56,257	54,109
Gross Margin			17,968	16,622
Other Expenses	Development	4,008	4,032	
	Selling and general	6,946	6,507	
	Interest	868	594	11,133
Earnings before taxes			6,146	5,489
Income tax expense			2,430	2,170
Net Income			3,716	3,319

Shares outstanding	In thousands	550	500
Earnings per share		\$6.7564	

**Exhibit 2 Balance sheets**

	As of December 31	1991	1990
<b>Assets</b>			
Cash and temporary investments		1,469	1,404
Accounts receivable		15,607	13,688
Inventories		25,467	22,162
Total current assets		42,543	37,254
Plant and equipment			
Original cost		45,736	35,890
Accumulated depreciation		15,979	13,691
Net		29,757	22,199
Investments and other assets		1,119	1,184
Total assets		73,419	60,637
<b>Liabilities and Owner's Equity</b>			
Accounts payable		24,286	18,520
Taxes payable		1,045	1,210
Current portion of long-term debt		1,634	1,205
Total current liabilities		26,965	20,935
Deferred income taxes		985	559
Long term Debt		9,748	7,222
Total liabilities		37,698	28,716
Common stock		14,512	12,368
Retained earnings		21,209	33
Total owner's equity		35,721	31,921
Total liabilities and owner's equity		73,419	60,637

**Exhibit 3 Financial data from New Proposal**

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**1. Projected asset investment**

		(000s)
Cash	<u>1</u>	\$50.00
Accounts receivable	<u>1</u>	\$207.67
Inventories	1	\$98.49
Plant and equipment	<u>2</u>	\$500.00
Total		\$856.16

**2. Cost data**

Variable cost per unit		\$3.32	
Differential fixed costs per year	<u>3</u>	\$141.00	(000's)

**3. Price/market estimates per year**

Selling price per unit		\$ 7.00	\$ 8.00	\$ 9.00
Expected sales units	(000's)	89.00	69.90	57.50

- 1 Assumes 89,000 units sales  
2 Annual capacity of 111,600 units  
3 Includes straight-line depreciation on new plant and equipment over 5 years.

**Exhibit 4****Divisional Data**

Division	Sales	EBIT	Assets			Total
			Specific		Allocated	
			Working capital	Fixed		
Consumer	\$24.80	\$3.60	\$20.30	\$11.50	\$1.60	\$33.40
Industrial	\$24.70	\$2.40	\$14.80	\$18.20	\$1.50	\$34.50
Professional Services	\$24.70	\$1.10	\$6.00	\$0.00	\$1.50	\$7.50