

inventory space and improved the company's cash flow. However, Chad noticed that because of the seasonal nature of the purchases of all of the products, especially award jackets (see Exhibit 5.5), the need for direct labor hours fluctuated widely from one month to the next (see Exhibit 5.13). Even though Chad is able to hire workers as needed, he is concerned that eventually he won't be able to find skilled workers unless they are promised a more consistent schedule. For C&C Sports, labor and sewing machines are constrained resources. The company can produce as many of their products as they have people to make them.

Chad gathered the following unit sales and cost information about each product.

	<u>Pants</u>	<u>Jerseys</u>	<u>Jackets</u>
Sales price	\$19.00	\$22.00	\$175.00
Direct materials	\$ 6.00	\$10.00	\$58.00
Direct labor	4.00	3.20	24.00
Variable overhead	2.20	1.76	13.20
Fixed overhead	2.80	2.24	16.80
Total cost	\$15.00	\$17.20	\$112.00
Gross profit	\$ 4.00	\$ 4.80	\$ 63.00
Direct labor hours	0.25	0.20	1.50

Claire Elliot, vice president for finance and administration, reminded him that a commission of 5% of the sales price and shipping costs of \$0.40 per item should also be considered when analyzing different strategies.

Required

- Calculate the contribution margin per unit for each product.
- Calculate the contribution margin per direct labor hour for each product.
- If demand wasn't an issue, what preference order should be given to producing each of the products? Be sure to consider what you learned in Chapter 7 about how jackets consume activities.
- If the sales mix continues as budgeted in 2021—200,000 pants, 70,000 jerseys, and 18,000 jackets—how many direct labor hours will be needed to produce these units? If C&C Sports chose to spread out production evenly throughout the year, how many direct labor hours would be required each week, assuming the company operates all 52 weeks per year?
- How many employees would be needed if operations ran two 8-hour shifts per day, 5 days per week (round up to the nearest whole number)? How many sewing machines would be needed?
- Assume that the sales team is able to increase jersey sales to 73,500 per year. What is the impact on total contribution margin if jerseys are made instead of pants? Instead of jackets? Would it be worthwhile to try to hire additional workers?

8.32 (LO 1) Identifying relevant costs and decision making It had been a quiet Monday morning for Anna Hogue, senior project manager at Flagstone Consulting. Everything seemed to be falling into place for the company's first conference, "Healthcare Management in the New Millenium," scheduled for October 11 and 12 in Boston. Then Ethan Tang, the staff consultant in charge of registration, stuck his head in the door.

"Anna," said Ethan, "I think we may have a problem with the conference. Only 10 people have registered. Our marketing consultants told us to expect at least a 3% registration rate from our direct mail campaign. Based on the 5,000 conference fliers we mailed, do you think another 140 people will register in the next three weeks?" Anna and Ethan had worked together to develop a budget for the conference, as follows. They had budgeted for registration response rates of 2%, 3%, and 4%, but a response rate of 0.3% was far outside their expectations.

	2% Response Rate		3% Response Rate		4% Response Rate	
	Total	Per Attendee	Total	Per Attendee	Total	Per Attendee
Registration fee income	\$69,500	\$695	\$104,250	\$695	\$139,000	\$695
Expenses						
Meals	15,000	\$150	22,500	\$150	30,000	\$150
Conference materials	7,500	75	11,250	75	15,000	75
Direct mail advertising	6,000		6,000		6,000	
Meeting room rental	4,500		4,500		4,500	
Equipment rental	500		500		500	
Speaker fees:						
Newton	600		600		600	
Smith	2,000		2,000		2,000	
Townasley ^a	4,000		4,000		4,000	
Speaker travel:						
Newton	200		200		200	
Smith	1,200		1,200		1,200	
Townasley	1,000		1,000		1,000	
Compton ^b	200		200		200	
Total expenses	42,700		53,950		65,200	
Net income	\$26,800		\$ 50,300		\$ 73,800	

^aTownasley required a \$1,000 deposit upon confirmation of the original conference date. The remaining \$3,000 was due upon her arrival at the conference. In the event of cancellation, the \$1,000 deposit was non-refundable.

^bCompton has agreed to speak for free.

Anna thought for a second, and then replied, “Ethan, based on what the marketing firm told us, at least 75% of all registrations are received a month before the conference. This response has me a bit worried. If we need to cancel the conference, we must do it before Thursday. Otherwise, it will be too late.” Anna and Ethan called a couple of contacts at other organizations, who related similar experiences with low preconference registration. They indicated that medical professionals often wait until the last minute to register and that in some instances, conferences had been rescheduled and re-advertised to increase registration.

Anna and Ethan decided they needed more information before they could make a final decision on the fate of the conference. Rescheduling it would require them to confirm the new dates with the speakers. Conference facilities would also need to be secured for the new dates. Fortunately, the conference materials had not been sent to the printer yet, so the printed materials would not become obsolete. Anna and Ethan decided that if the conference were rescheduled, Flagstone would offer a reduced registration fee of \$595 to companies that sent more than one person.

Anna called some of the Boston-area professionals who had expressed interest in the conference but had not registered yet. Some of them indicated that they had never received the registration mailing. After contacting the marketing firm about the matter, Anna learned that there had indeed been problems with the mailing. The marketing firm had subcontracted the mailing to a second firm, which could not verify that all the materials had been mailed. Anna wondered how many other prospects had not received the mailing.

Next, Anna arranged a conference call with all the speakers, to explain what was going on. They agreed that the mailing problem could have contributed to the low registration. All the speakers were available on December 8 and 9, and were willing to change their schedules to accommodate Flagstone if the firm chose to reschedule the conference. Steve Smith indicated that he had already purchased a non-refundable airline ticket for \$800. If the conference were rescheduled, he would incur an additional \$100 charge to change the flight. William Townasley indicated that he was already scheduled to be in Boston on December 7, so Flagstone would not have to cover his travel expenses if the conference were rescheduled.

Ethan called the University Parks Inn to discuss the facilities contract. Although Flagstone had made no payments to the hotel yet, the special events coordinator reminded Ethan of two points in the contract:

1. A cancellation fee of \$10,000 would need to be paid if the conference were canceled at this late date. However, the inn would agree to waive the cancellation fee if the conference were rescheduled within four months of the original date.
2. Flagstone had guaranteed a minimum of 60 guest rooms. If conference attendees booked fewer rooms, Flagstone would have to pay an additional \$5,000 for the meeting room rental.

Ethan also contacted the marketing firm about doing additional mailings. In light of the problems with the earlier mailing, the marketing firm offered to do two additional mailings for a total of \$1,500. They also agreed to expand the mailing list to include several other professional organizations, as well as students at medical and nursing schools in the area. The firm estimated the new mailings would reach 8,000 people and should result in a 2% registration rate. Of that 2%, 10% were expected to qualify for the reduced registration fee.

Required

- What alternatives are available to Anna and Ethan with regard to holding the conference?
- Prepare pro-forma income statements for each of the alternatives you identified in question (a).
- Adjust the statements in part (b) by eliminating the unavoidable costs from the calculation to show only the relevant income/loss from each option.
- What are the pros and cons of holding the conference as scheduled?
- What are the pros and cons of canceling the conference?
- What are the pros and cons of rescheduling the conference?
- How should Flagstone view this conference—in the short term or in the long term?

8.33 (LO 2, 3, 5) Special order pricing, outsourcing, eliminating operations Whirlwind Industries is a multiproduct company with several manufacturing plants. The Brownwood Plant manufactures and distributes two carpet cleaning products, Household and Commercial, under the Karpet Kleen label. The forecasted operating results for the first six months of the year are presented in the following statement.

Karpet Kleen—Brownwood Plant			
Forecasted Result of Operations			
For the six months ended June 30			
(in thousands)			
	<u>Household</u>	<u>Commercial</u>	<u>Total</u>
Units	100	100	200
Sales revenue	\$2,000	\$3,000	\$5,000
Cost of goods sold	1,600	1,900	3,500
Gross profit	\$ 400	\$1,100	\$1,500
Selling & administrative expenses			
Variable	\$ 300	\$ 700	\$1,000
Fixed ^a	240	360	600
Total selling & administrative expenses	\$ 540	\$1,060	\$1,600
Income (loss) before taxes	\$ (140)	\$ 40	\$ (100)

^aFixed selling & administrative expenses are allocated between the two products on the basis of relative sales dollars. These expenses are avoidable only if the entire plant is closed.

The product costs per unit are as follows:

	<u>Household</u>	<u>Commercial</u>
Direct materials	\$ 7	\$ 8
Direct labor	4	4
Variable manufacturing overhead	1	2
Fixed manufacturing overhead	4	5
Total product cost	<u>\$16</u>	<u>\$19</u>

Each product is manufactured on a separate production line. Normal manufacturing capacity is 200,000 cases of each product per year. However, the plant is capable of producing 250,000 cases of the Household product and 350,000 cases of the Commercial product per year. Capacity levels assume an even flow of production throughout the year, so that the maximum capacity for the second half of the year is 125,000 cases of Household and 175,000 of Commercial cases.

The following schedule reflects the top management's consensus regarding the price/volume alternatives for Karpet Kleen products in the second six months of the year. These are essentially the same alternatives management faced during the first six months of the year.