

Case 52

Aunt Allee's Jams and Jellies

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Aunt Allee's Jams and Jellies was founded by Allee Glover and her husband Mangrum in the kitchen of their modest farm in 1958. The original products that were produced by the company were cherry jam and cherry jelly, using an old family recipe and fruit grown on the family farm. As demand grew, cherries were bought from local farms (all within 50 miles of the factory).

By 2008 the business had grown to occupy a modest 20,000-square-foot factory/office building on the site of the old farm. In 2008 the company was still family owned and was operated by four of the founder's grandchildren. Hobb Glover is the company's president. He manages the business and generally helps out in the office as needed. His sister, Amanda Smith, does the marketing and selling of the products. Their cousin, Conrad Glover, is the business's accountant and materials manager. Another cousin, Edith Woods, is the production and maintenance and engineering manager.

By 2001 demand for the cherry jam and jelly had outstripped the company's ability to produce enough jam and jelly from fresh fruit in season. Production was converted to using concentrates and frozen cherries—but all from locally grown fruit. In 2006 the current plant was built with the idea that the company would diversify its product line by introducing two new jams, white grape and blueberry, and a new jelly, white grape, using other fruits available in the state. Test marketing had shown all three products to be popular, and each could command a premium price with higher markups than the current cherry products.

The new products were introduced in late 2006 and were in full production throughout 2007. The family was pleased that the new jams and jellies performed as well as forecast.

They were also pleased that the sales of the cherry jelly and jam were not depressed by the sales of the new products. Unfortunately, the financial results (Table 52-1) were disappointing since traditionally the company has achieved an average of 43% return on sales.

Table 52-1 Financial Results

	Cherry		Grape		Blueberry	Total
	Jelly	Jam	Jelly	Jam	Jam	
Sales	\$576,000	\$432,000	\$145,455	\$72,730	\$36,669	\$1,262,854
Materials	230,400	172,800	43,637	21,819	12,101	480,756
Direct Labor	30,789	23,092	16,986	8,493	4,057	83,418
Overhead @ 13.6% of sales	78,506	58,879	19,825	9,913	4,998	172,120
Tot. Oper. Income	236,305	177,229	65,008	32,505	15,513	526,560
Return on Sales	41.0%	41.0%	44.7%	44.7%	42.3%	41.7%

The factory is operating near capacity, so some decisions need to be made on next year's production. In January 2008, Hobb calls a meeting with Amanda, Conrad, and Edith to discuss the financial results and decide on what needs to be done.

Hobb opens the meeting with a review of the company's current financial situation. While return on sales are only slightly lower than before plant expansion, the increased profit from the new products was being counted on to pay the loan on the new building. Hobb and Conrad do not believe that the company can afford to expand again for at least three more years.

Amanda reports that she has been looking at extensions to the product line. The current products are meeting demand, and she does not believe that demand will increase substantially. She has identified two additional jams which can be sold in quantities similar to blueberry and which should return similar margins. She recommends cutting back on cherry jelly production, if necessary, in order to fill all the orders she can generate for the higher margin items.

Edith reports that the new products cause several problems in production. The main problem is in the setup of the production run. In the past, setups were relatively painless.

Since both products were the same color and flavor, changing over to run a different product was just a matter of emptying and sanitizing the lines. With the current products, when flavors are changed, an extensive changeover is required. Where in the past setups took less than 30 minutes, they now take more than an hour, depending on the product to be produced, because some changeovers require more cleaning and sanitizing between products. She has had to increase hours worked per day to 10 to offset the setups. Edith has so far kept the workweek to four days with no overtime but warns that the limit has been reached with the current crew size. Another shift will be necessary if demand increases.

Conrad reports similar problems in the production control and the accounts payable functions. He reminds the management team that they have had to add one person to the office to support the additional support work required by the diversification in the product line. The additional workload is being caused by more items needing to be tracked, such as labels, fruit, and additional ingredients; more payments to be processed to the fruit growers; and more invoices to check. While Conrad is happy with the sales and apparent markups achieved by the new products, he openly wonders if the current costing system (where overhead allocations are based on dollar sales) is misrepresenting the true costs and thus the true returns on the new items. Conrad suggests reanalyzing the costs based on activity-based costing.

The management team agrees that it is difficult to make decisions if there is concern about the cost system, especially from the head of accounting. Conrad and Edith are tasked with looking into what the five products are really costing Aunt Allee's Jams and Jellies.

As a first step, Conrad and Edith tabulate production requirements and production rates (see Table 52-2). Edith notes that the batch size differences are caused by the size of the different kettles used for each product. Edith also notes that the reason for the different setup times is the difference in the ease of doing the clean-out required between batches. During setup, three people of the four-person crew work on setup while the fourth attends to preventive maintenance and other indirect labor activities. During processing, four members of the crew are needed.

Table 52-2 Production Data

	Cherry		Grape		Blueberry
	Jelly	Jam	Jelly	Jam	Jam
Units produced	128,000	96,000	29,091	14,546	6,667
Price per unit	\$4.50	4.50	\$5.00	\$5.00	\$5.50
Batch size, gallons	200	200	50	50	50
Batches produced	42	32	38	19	9
Direct material/unit	\$1.80	\$1.80	\$1.50	\$1.50	\$1.82
Direct labor hrs/batch	58.5	58.5	35.5	35.5	37.0
Direct labor hrs/100 units	1.92	1.92	4.67	4.67	4.87
Direct labor hours	2463	1847	1359	679	325
Direct labor \$	\$30,789	\$23,092	\$16,986	\$8,493	\$4,057
Units/batch @ 95% yield	3040	3040	760	760	760
Setup time/batch	0.5	0.5	1.5	1.5	1
Administration	1	1	1	1	1.25

As a second step, Conrad and Edith look at the overhead dollars. Conrad notes that the overhead rate was just over 11% of sales two years earlier. The overhead is broken down into five categories (see Table 52-3). The remaining expenses (the salaries of the cousins, the depreciation of the building and equipment, etc.) are considered period costs in Aunt Allee's Jams and Jellies accounting system.

Conrad explains that the indirect labor includes all the hours of the four-person production crew not charged as direct labor. They are all paid \$12.50 per hour and work 2000 hours per year. Conrad and Edith agree that the indirect labor hours of the four-person crew is either setup labor or maintenance. The indirect labor is largely driven by the hours that the machines are in use, which is equivalent to the direct labor hours.

Table 52-3 Overhead

Indirect labor	\$16,582
Fringe benefits	\$50,000
Machine maintenance	\$20,000
Cleaning & disposables	\$20,000
Energy	\$12,000
Indirect materials	\$ 4,500
Scrap	\$24,038
Office worker	\$25,000
Total	\$172,120

Fringe benefits are based on wages and amount to an additional 40% (insurance, FICA, benefits, etc). They can be allocated among the products based on direct labor hours. Machine maintenance costs are directly related to machine use, which can be tracked by the number of units produced. Cleaning supplies and disposable parts are used during the setup of the processing line. Usage is reasonably proportional to the number of setups (which is equal to the number of batches produced).

Energy costs are most directly related to the number of units produced. The scrap costs are directly related to setup, and usually amount to 5% of the value of materials.

Indirect materials are mainly shipping supplies. Their consumption is based on orders shipped. As an order can be a mix of products and can be of varying quantities of product, Conrad does not see an easy cost driver. Since it is a relatively minor sum, he figures that sales volume is as good a method of allocation as any other.

Conrad estimates that the office workload is the same for cherry jelly, cherry jam, white grape jelly, and white grape jam. The workload (parts administration) caused by blueberry jam is 1.25 times as high as for any of the other products, due to supplier issues. The office worker makes the same pay rate as the production workers.

Based on the activity-based costs, what margin is each product achieving? Should Aunt Allee's Jams and Jellies expand their product line to include more low-volume specialty jams and jellies?