

Classic pen company case

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AVS buys the grapes at the point that they have ripened on the vine. AVS is responsible for harvesting the grapes and all further processing of the grapes into wine. In 2010, AVS earned an operating margin of almost \$100, 000 on sales of \$848, 000, for an 11. 6% margin (see Exhibit 1). The process of winemaking is fairly simple, yet requires much attention to process details. After the grapes are harvested, they are brought to the winery for washing and crushing. The crushing process separates the juice from the pulp, skin, and stems. The juice is used to make the wine; the pulp, skin, and stems are recycled back onto the fields whenever possible or otherwise disposed of. The amount of wine generated from the grapes is dependent each year on a number of climatic and growth factors such as temperature, length of the growing season, rootstock, and fertilizers used. Once the juice is extracted, it moves into the fermenting process. The Chardonnay wine grape is fermented using oak barrels; the oak in the barrels gives flavor to the Chardonnay wine.

The barrels are expensive (\$500 each) but are sold after four years for \$200 apiece to another smaller winery. The juice fermenting in each barrel results in the production of 40 cases of wine. The generic white grape juices are fermented in a holding tank; a full tank would result in the production of 1, 500 cases of wine. The fermenting process takes place in a temperature-controlled environment; however, each fermenting method results in some wine loss through evaporation. Kay Aproveche estimates that the Chardonnay will lose approximately 10 percent of its volume through the fermentation process, while the generic white will lose approximately 5 percent of its volume. Harvest takes place in the late summer and early fall

months; typically, the time elapsed from harvest to final sale is about 11 months. Case: A Votre Sante Page 2 of 17.

Data related to the three wines are as follows: Chardonnay-Estate contains only Chardonnay grapes that are grown for AVS; the expected sales price is \$22/bottle. The market demand for Chardonnay-Estate wine is estimated to be 24, 000 bottles for 2010. Regular Chardonnay is blended by combining the Chardonnay wine left over after bottling the Chardonnay-Estate with the fermented generic wine; the blended mixture is two parts Chardonnay grapes and one part generic grapes. The expected sales price is \$16/bottle. Blanc de Blanc wine is made from all remaining generic white grapes; the expected sales price is \$11/bottle. All three wines are bottled at AVS using one bottling line. In a typical year, AVS bottles enough Chardonnay-Estate to meet the predicted market demand then bottles the regular Chardonnay after blending all remaining Chardonnay wine with the necessary amount of generic grapes. The Blanc de Blanc is the last wine to be bottled, using all remaining generic white grapes. Kay again expects the wines from this harvest year to sell out.

ADDITIONAL OPERATIONAL AND COST DATA

Chardonnay Grapes 2009 harvest - 100, 000 pounds purchase price of \$85, 500 expected loss in volume through fermentation and bottling - 10% Case: A Votre Sante Page 3 of 17. Generic White Grapes 2009 harvest - 60, 000 pounds purchase price of \$38, 500 expected loss in volume through fermentation and bottling - 5% Wine-making Chardonnay grapes are fermented in oak barrels; each barrel results in the production of 40 cases of wine Barrels cost \$500 apiece, and can be used for our years and sold for

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\$200 each at the end of four years; assume that you have to purchase all new barrels for the 2009 harvest Generic white grapes are fermented in the holding tank; the tank can hold up to the equivalent of 1, 500 cases of wine Bottling Requires 36 pounds of grapes (post-fermenting) for one case (12 bottles) of wine In the bottling process, the wine is put into bottles, with both corks and labels added during this process. The materials cost associated with the bottles, corks, and labels are estimated to be \$2. 50/bottle. Direct Labor Harvest labor is paid an average of \$7. 5 / hour. It is estimated that 80 pounds of grapes can be harvested each hour. Crush labor is paid an average of \$8. 00/hour. It is estimated that it will take 300 hours to crush the grape harvest. Overhead Expenses Administrative rent and office expenses - Estimated to be \$20, 000 / year. Depreciation is charged based on the following equipment schedule: Case: A Votre Sante Page 4 of 17 Equipment Tractors Crushers Holding Tank Bottle Lines Cost \$15, 000 \$6, 000 \$40, 000 \$10, 000 Est. Life 10 years 20 years 10 years 5 years Other Production Equipment \$15, 000. Indirect Materials - Part of the wine-making process involves introducing yeasts and other additives into the wine to help the fermentation process and to help balance the flavors in the wine. Indirect production materials average \$1. 55 per case of wine. Lab expenses - Lab expenses of \$8, 000 are incurred for lab supplies and equipment. The lab is used by the production supervisor and the wine master to test the grapes and wine at various stages of production. Liquor taxes - AVS is required to pay a liquor excise tax of \$3/bottle on every bottle of wine sold.

Production office - AVS pays a part-time person to help administer the production function. This person orders supplies, reviews and approves

production invoices, and performs other administrative functions. The production office budget is estimated to be a flat rate of \$12, 000. Sales and related – Kay’s sister, Bebe Cadadia, is paid \$30, 000/year on a contract basis to sell AVS wines. She works through distributors, who are paid \$2/bottle for each bottle sold. Supervision – Kay’s brother, Kan Pai, supervises the production of wine from the harvest through the bottling processes. His salary and benefits total \$55, 000 annually.

Case: A Votre Sante Page 5 of 17 Utilities – Utility costs are incurred primarily to maintain a constant temperature in the fermenting process. These are expected to be \$5, 500. Waste treatment – After crushing, the pulp, skins, and stems that are left over must be disposed of. One-half of the waste can be recycled back onto the fields as a compost material; the other one-half must be disposed of at a landfill dumping cost of \$2, 000. A winemaster is employed to help formulate and test the wines. This is done on a contract basis; AVS pays the winemaster \$5, 000 for each type of wine that is formulated. Kay’s role is to manage the AVS business. Her annual salary and benefits total \$75, 000.

CASE QUESTIONS

1. Create a single company-wide contribution margin income statement for AVS that includes each expense category. Also, calculate the average revenue and net income for one bottle of wine. (Note: Do not break out the variable or the fixed costs by type of wine).
2. Another grower has available 20, 000 pounds of Chardonnay grapes from the 2009 harvest. AVS has the opportunity to buy the juice from these grapes (they have already been harvested and crushed). If AVS

- could blend these grapes with the generic white grapes (using the 2: 1 blend formula) to produce a new Chardonnay wine to be priced at \$14/bottle and required a 15% return on sales for this wine, what is the maximum amount that AVS would pay for a pound of grapes?
3. Other than the cost of the grapes, what factors would you consider to support your purchase of the grapes, and what factors would cause you to reject buying the grapes?
 4. Kay Aproveche recently read an article about Activity Based Costing (ABC) and is intrigued by the costing methodology. She would like to be able to better assign costs to each of AVS's products and has collected the following information about AVS activities. Use this Case: A Votre Sante Page 6 of 17 information, along with the information given in the case, to construct a product cost analysis using ABC. Assume that AVS did not buy the grapes referred to in Question 2.
Harvesting activity - The Chardonnay grapes can be harvested at the average rate of 71.5 pounds/hour, while the generic white grapes are harvested at the rate of 100 pounds/hour.

Includes costs related to tractors and harvest labor. Crush activity - Relates to the pounds of grapes crushed. Includes costs of crusher equipment and crush labor. Fermenting Activities - Barrel costs relate to the Chardonnay wines by the percentage of wine used in each wine type. Holding tanks relate to the Blanc de Blanc and the Chardonnay regular wines by the percentage of wine used in each wine type. Lab and Supervision Activities - Kan Pai estimates that these activities are split 60% Chardonnay-Estate, 25% Chardonnay regular, and 15% Blanc de Blanc. Other production activities

and costs not directly associated with a specific wine - allocate according to the number of bottles produced of each wine. Administrative activities - Allocate according to sales revenues. Write a brief memo to Kay Aproveche that explains what ABC is, and that discusses both the benefits and costs of doing an ABC analysis. What would you recommend to Kay Aproveche regarding the ABC analysis?

TEACHING NOTE: A VOTRE SANTE

The A Votre Sante (AVS) case is multi-faceted in that it requires students to incorporate operational measures into product costing results, and also to understand cost accounting from a variety of perspectives, such as Product versus period costs Variable versus fixed costs Activity-based costing Relevant costs and opportunity costs Additionally, the case questions require both quantitative and qualitative analyses of the business issues faced by AVS. AVS has been used in a graduate-level managerial accounting class for MBAs and would be most appropriate for an advanced undergraduate or a graduate-level accounting or MBA course. The detail in the case is rich enough to support a variety of analyses. Alternative uses could be to have the student construct a cost of goods manufactured statement or a traditional financial statement, both of which reinforce the differences between product and period costs. Students must know the difference between product and period costs to successfully complete the ABC analysis, but they could be made more explicit by requiring the statements. Additionally, alternative decision analysis questions could be developed using the variable and fixed cost structures described in the case. Case question number two is only one example of a potential decision analysis

question. The following discussion contains the answers to the questions listed in the case and does not detail the solutions to alternative questions.

Case: A Votre Sante Page 9 of 17.

Question 1: Contribution Margin Income Statement To develop the contribution margin income statement, you first have to calculate the number of bottles of wine produced by AVS. This number is dependent upon the yield from the grapes. The relevant calculations are as follows:
Chardonnay Grapes 100, 000 10, 000 10% 90, 000 Generic Grapes 60, 000 3, 000 57, 000 Yield: Pounds harvested Loss in processing Yield Bottles of wine produced: 5% Chardonnay

The contribution margin income statement (Teaching Note Exhibit 1) is fairly straightforward, with the following concepts/calculations causing the most difficulty: The inclusion of liquor taxes and sales commissions in variable costs: These are both period expenses but are clearly based upon the number of bottles sold, and therefore are included in the variable costs. Where to include the wine master expense: Since the wine master is paid according to number of blends, not the number of bottles, this expense is listed as a fixed cost. Arguably, it could be listed as a variable cost, given that the cost will be based on the number of wines produced. As part of the discussion, we will examine the rationale behind listing wine master as a fixed or a variable expense.

Barrel expense: The case states that the barrels produce the equivalent of 40 cases of wine. A case of wine is post-fermentation/bottling and therefore after the 10% loss has occurred.

The Case: A Votre Sante Page 10 of 17 barrels contain the wine at the start of the process. Therefore, there have to be enough barrels to hold all the wine at the beginning of the process, not at the end. This factor results in 63 (62.5) barrels being required for the harvest¹.

Question 2: Additional Purchase Opportunity, Quantitative Analysis Case
Question 2 asks what is the maximum amount that AVS would pay to buy an additional pound of Chardonnay grapes. There are three parts to calculating this answer: the benefit from the additional Chardonnay wine to be sold, the relevant costs related to producing this wine, and the opportunity cost of not producing as much Blanc de Blanc wine. Teaching Note Exhibit 2 displays the calculations relevant to this decision. Chardonnay regular wine requires a 2 to 1 mixture of Chardonnay and Blanc de Blanc wine. Therefore, the 18,000 pounds of Chardonnay grapes will be combined with 9,000 pounds of generic grapes. The 27,000 pounds of grapes will result in an additional 9,000 bottles of Chardonnay regular wine being produced. However, it will also result in a 3,000-bottle decrease in the amount of Blanc de Blanc wine produced, since some generic grapes will now be used for the Chardonnay regular wine.

Question 3: Additional Purchase Opportunity, Qualitative Analysis The following factors would support AVS's decision to purchase the additional grapes: Potential increase in market share Diversification of suppliers Ability to leverage fixed costs over more production If the quality of the purchased grape is perceived to be better To block a competitor from buying the grapes
¹ Each case of wine requires 36 pounds of grapes (post-fermenting). A barrel holds the equivalent of 40 cases of wine (post-fermenting), or 1,440 pounds

of grapes (40 x 36). To convert the post-fermenting grapes to preferment grapes, they must be divided by .9, or $1,440 / .9$ equals 1,600 pounds of grapes. The harvest of 100,000 pounds of grapes, therefore, requires 62.5 barrels for storage ($100,000 / 1,600$). Ability to focus time and effort on winemaking (rather than harvesting and crushing) Creates an incentive for the current grower to control costs The following factors would support AVS's decision to reject the grape purchase: Poor quality of the grapes An additional AVS Chardonnay wine creates confusion in the marketplace Lack of control over the harvest and crush process Lack of confidence in the additional sales forecast Inability of the current capacity (e. g. bottling line, space) to support additional production Inability to use the additional barrels purchased in future years Cannibalization of the current Chardonnay, Chardonnay-Estate or Blanc de Blanc sales Reliability concerns with the new supplier Other hidden costs.

Question 4: ABC Quantitative Analysis Teaching Note Exhibit 3 contains the ABC product costing analysis, and shows both the per product line and per-unit costs. The ABC outcome demonstrates that the Chardonnay-Estate is the most profitable wine for AVS, the Chardonnay-Regular is marginally profitable, and the Blanc de Blanc is not profitable. While Blanc de Blanc is not profitable, a product-line contribution analysis would need to be completed to determine if Blanc de Blanc has a positive contribution margin, and therefore contributes to covering fixed costs of AVS. Case: A Votre Sante

Page 12 of 17 Question 5: ABC Qualitative Analysis The first part of this question asks for an explanation of ABC, and a discussion of the benefits and costs of an ABC analysis. Relevant points are that ABC is a method of

assigning costs that first assigns costs to the activities identified in the business, and these costs are assigned to the cost objects (in this case, the three wines) in a manner which reflects each cost object's use of the activity. Using ABC to assign costs is especially beneficial where there exists either variation in processes or variations in cost object requirements. It is also useful as a tool to calculate activity or process costs, which can act as a benchmark against which to judge future improvements. A well-defined ABC cost allocation will provide more accurate costing information than a less-sophisticated cost allocation system. The costs of ABC are that it is a time-consuming process and it requires a comprehensive knowledge of the entire operation to successfully complete.

For a small company such as AVS, software costs would be minimal; the ABC system could easily be constructed using a spreadsheet program. After looking at the results of the ABC analysis, it is clear that the Chardonnay-Estate wine is driving the profitability of AVS. The Blanc de Blanc is the poorest performer; recommendations to Kay Aproveche would be to explore both pricing and cost control opportunities for the Blanc de Blanc wine. One "rule of thumb" used in the wine industry is that the price of a bottle of wine is approximately related to the cost of a ton of grapes by a factor of 100. If you multiply the \$11 price per bottle by 100, the result is \$1,100. AVS pays \$1,283 for a ton of generic grapes, which suggests that AVS is not receiving enough value for Blanc de Blanc wine relative to the price of the grapes. Perhaps AVS is paying too much for this grape, or they are underpricing the wine. The answer to this cannot be fathomed by data in the case, and is subject to many other variables (such as the strength of the harvest and

strength of the wine market); however, it is mentioned here as a performance measure that is used in the industry. Although some students will suggest that AVS discontinue producing Blanc de Blanc because it has a positive contribution margin it would not be to AVS's benefit to discontinue this wine without having a better substitute.

Looking at the line item costs, students should note that the costs for bottles, labels, and corks are the same for each of the wines, which may not be correct or appropriate. Students should question whether this makes sense, and note that AVS might decrease costs in the Blanc de Blanc line by buying lower-priced bottles, labels, and corks. Another interesting piece of information from the cost analysis is the Wine Master cost and how large it is on a per-unit basis when the number of bottles is low. This helps demonstrate to the students how volume creates economies of scale, and often leads into a discussion about how to expand product lines without incurring additional fixed costs, especially when the initial volume is expected to be low. Summary The AVS case is based upon actual wine industry data, although the data has been simplified to reinforce the teaching points and concepts. It is also true to the winemaking process, with the exception of AVS's process of making the Chardonnay regular wine from the fermented Chardonnay and Blanc de Blanc wines. This can be done, but most commonly the juice from the wine grapes is combined at the start of the fermenting process so that they can ferment together. Because of the different yield rates in the fermenting process, the case had the wines ferment separately and blend at the end. The case can be taught in a 75-

minute class, or by omitting the decision analysis question 50 minutes would be sufficient. I have also used it to teach the differences between the financial income statement reporting (product and period costs) and the contribution margin income statement reporting (variable and fixed costs), and then assigned decision analysis and/or the ABC costing as an additional assignment. Case: A Votre Sante Page 14 of 17 Teaching.