

## QSO 320 Final Project Guidelines and Rubric

### Overview

Data analysis and communication of data to stakeholders are key factors in effective management. You cannot efficiently manage unless you know if objectives are being met. You can use data and spreadsheets to assess areas of concern and evaluate if progress is being made for key objectives. The process of reviewing the data is not a one-time event; it must be repeated frequently or be continuous. This is where spreadsheets that are linked to sources of data being collected provide an advantage. As the input data values change, the spreadsheets do not need to be changed in order for them to calculate the results. You can use the data to evaluate the efficiencies or inefficiencies of key objectives.

In the plan-do-check-act management cycle, management **plans** a set of objectives, develops processes, and allocates resources that the company will execute (or **do**). Progress in meeting set objectives is monitored, and feedback is provided (the **check**). Based on feedback, adjustments to the plans are made (the **act**). The final project for this course is the creation of an analysis report. The final product represents your ability to logically drill down large amounts of raw data to produce useful reports that can be utilized to ensure optimal allocation of resources to maximize profitability. You will construct a report that includes your analysis of sales, costs, and profit to develop an overall understanding of performance that can be used for stakeholder decision making. The project is divided into **two milestones**, which will be submitted at various points throughout the course to scaffold learning and ensure quality final submissions. These milestones will be submitted in **Modules Three and Five**. The final product will be submitted in **Module Seven**.

In this assignment, you will demonstrate your mastery of the following course outcomes:

- QSO-320-01: Utilize basic functionality of spreadsheet software for constructing effective databases that evaluate organizational decisions
- QSO-320-02: Conduct descriptive and inferential statistical analyses of raw data using spreadsheet software for informing processes and operations
- QSO-320-03: Conduct optimization analyses of raw data using spreadsheet software for reaching solutions that meet organizational objectives
- QSO-320-04: Present business data analysis using spreadsheet software that clearly communicates specific information to key stakeholders

### Prompt

In the case study, you are constructing a number of spreadsheets to evaluate specific aspects of a winery and its distribution operation. Certain factors, such as increasing wine production significantly or lowering production costs, require significant time to enact. However, making changes regarding distribution can be made fairly quickly using spreadsheets. In the case study, new management wants to understand how efficient their distribution system is functioning. You will analyze the data and present the data in a way that can be clearly communicated to the key stakeholders. Use the following documents for your analysis report:

- [Case Study](#)
- [Case Study Data Set](#)

Specifically, you must address the **critical elements** listed below. Most of the critical elements align with a particular course outcome (shown in brackets).

- I. **Organizational Sales:** For the first part of your final project, you will review raw data sets that summarize the production, sales, and distribution of wine. You will need to analyze the various types of wine and different distribution centers to determine their financial impacts on the organization's total revenue. All of your analyses need to be submitted in an annotated excel file and include a rationale.
  - A. Using a pivot table, determine the percentage of **wine varieties** sold from each distribution center. Illustrate your results in the form of a pie chart. [QSO-320-01]
  - B. Generate a labeled bar chart that illustrates the sum of wine varieties sold to each **distribution center**. [QSO-320-02]
  - C. Using a pivot table, calculate the total amount of **revenue** generated for each distribution center. Illustrate your results on a bar chart. [QSO-320-01]
  - D. Using the IF function, calculate the **central tendencies** (the mean, median, and mode) of shipment volume for each distribution center. Illustrate your results in a table. [QSO-320-02]
  - E. Analyze frequency of **shipments by size** using a histogram. [QSO-320-02]
  - F. Create a shipment histogram to show the **distribution of shipments** for Portland and Riverside. [QSO-320-01]
  - G. Provide a summary statement that describes the inefficiencies in the organizational **sales analysis**. In your response, explain why this information is important for influencing management decisions. [QSO-320-04]
  
- II. **Organizational Cost and Profit:** For the next part of your final project, use your findings and raw data from the previous section to dive deeper into types of wine and distribution centers. You will need to analyze these factors to determine average costs and profits. All of your analyses need to be submitted in an annotated excel file and include a rationale.
  - A. Calculate **costs of shipping** to Portland and Riverside by pallets and frequency. Illustrate your results in a table. [QSO-320-02]
  - B. Calculate the **cost of production** for the wine varieties sold in Portland and Riverside. Illustrate your results in a table. [QSO-320-02]
  - C. Generate a labeled table that illustrates **gross profit** for each variety of wine for each distribution center. Explain why this information is important for informing operation efficiencies. [QSO-320-04]
  - D. Generate a labeled table that shows the profit after **state taxes**. [QSO-320-04]
  - E. Provide a summary statement that describes the inefficiencies in the organizational **cost and profit analysis**, and explain why this information is important for influencing management decisions. [QSO-320-04]
  
- III. **Optimizing Performance:** Finally, you will determine an optimal solution that will maximize the organization's objectives. You will need to consider the level of sensitivity and uncertainty of alternative solutions in supporting your optimal solution. The analyses need to be submitted in an annotated excel file and include a rationale.
  - A. Determine the values of the **constraints** to be used to generate the target number when running Solver. [QSO-320-03]
  - B. Using Solver, calculate the level of **sensitivity** of decision variables and describe the significance of the report. [QSO-320-03]
  - C. Using Solver, calculate the **limits** of decision variables and describe the significance of the report. [QSO-320-03]

D. Discuss **solutions** that will maximize profits for the organization based on the Solver analysis. [QSO-320-04]

### Milestones

Milestone One: Organization Sales

In **Module Three**, you will submit a draft of the Organizational Sales section of the final project. **This milestone will be graded with the Milestone One Rubric.**

Milestone Two: Organizational Cost and Profit

In **Module Five**, you will submit a draft of the Organizational Cost and Profit section of the final project. **This milestone will be graded with the Milestone Two Rubric.**

Final Submission: Analysis Report

In **Module Seven**, you will submit your final project. It should be a complete, polished artifact containing **all** of the critical elements of the final product. It should reflect the incorporation of feedback gained throughout the course. **This submission will be graded with the Final Project Rubric.**

### Final Project Rubric

**Guidelines for Submission:** Your analysis report should be submitted as an annotated Excel file. All spreadsheet, table, and chart functions must be created within the analysis report. Cutting and pasting spreadsheets, tables, or charts in from another source will result in your work being evaluated as “Not Evident,” as it is important to demonstrate that you utilized the spreadsheet functionality. Spreadsheets and tables must link to the information provided in the Data tab. The rationale used for each task must be provided in the same tab where the task is addressed.

Critical Elements	Exemplary	Proficient	Needs Improvement	Not Evident	Value
<b>Organizational Sales: Wine Varieties</b> [QSO-320-01]	Meets “Proficient” criteria and demonstrates an insightful rationale for appropriately employed Excel functions (100%)	Uses a pivot table to determine the percentage of wine varieties sold from each distribution center and illustrates results in the pie chart (85%)	Uses a pivot table to determine the percentage of wine varieties sold from each distribution center, but does not illustrate results in the pie chart, or response contains inaccuracies or is missing key information (55%)	Does not determine the percentage of wine varieties sold from each distribution center (0%)	8

Critical Elements	Exemplary	Proficient	Needs Improvement	Not Evident	Value
<b>Organizational Sales: Distribution Center</b> [QSO-320-02]	Meets "Proficient" criteria and demonstrates an insightful rationale for appropriately employed Excel functions (100%)	Generates a labeled bar chart that illustrates the sum of wine varieties sold to each distribution center (85%)	Generates a labeled bar chart that illustrates the sum of wine varieties sold to each distribution center, but bar chart contains inaccuracies or is missing key information, or a rationale is not provided (55%)	Does not generate a labeled bar chart that illustrate the sum of wine varieties sold to each distribution center (0%)	6
<b>Organizational Sales: Revenue</b> [QSO-320-01]	Meets "Proficient" criteria and demonstrates an insightful rationale for appropriately employed Excel functions (100%)	Uses a pivot table to calculate the total amount of revenue for each distribution center and illustrates results in a bar chart (85%)	Uses a pivot table to calculate the total amount of revenue for each distribution center, but does not illustrate results in a bar chart, or response contains inaccuracies or is missing key information, or a rationale is not provided (55%)	Does not calculate the total amount of revenue for each distribution center (0%)	8
<b>Organizational Sales: Central Tendencies</b> [QSO-320-02]	Meets "Proficient" criteria and demonstrates an insightful rationale for appropriately employed Excel functions (100%)	Uses the IF function to calculate the central tendencies of shipment volume for each distribution center and illustrates the results in a table (85%)	Uses the IF function to calculate the central tendencies of shipment volume for each distribution center, but does not illustrate the results in a table, or response contains inaccuracies or is missing key information, or a rationale is not provided (55%)	Does not calculate the central tendencies (0%)	6
<b>Organizational Sales: Shipments by Size</b> [QSO-320-02]		Analyzes the frequency of the shipment by size using a histogram (100%)	Analyzes the frequency of the shipment by size using a histogram, but response contains inaccuracies or a rationale is not provided (55%)	Does not analyze the frequency of the shipment by size (0%)	6

Critical Elements	Exemplary	Proficient	Needs Improvement	Not Evident	Value
<b>Organizational Sales: Distribution of Shipments</b> [QSO-320-01]		Creates a shipment histogram to show the distribution of shipments for Portland and Riverside (100%)	Creates a shipment histogram to show the distribution of shipments to Portland and Riverside, but response contains inaccuracies or a rationale is not provided (55%)	Does not create a shipment histogram to show the distribution of shipments for Portland and Riverside (0%)	8
<b>Organizational Sales Sales Analysis</b> [QSO-320-04]	Meets “Proficient” criteria and response demonstrates a sophisticated awareness of how the inefficiencies impact managerial decision making (100%)	Provides a summary statement that describes the inefficiencies in the organizational sales analysis and explains why information is important for influencing decisions (85%)	Provides a summary statement, but the statement description is cursory, contains inaccuracies, or lacks justification (55%)	Does not provide a summary statement that describes the inefficiencies in the organizational sales analysis (0%)	4
<b>Organizational Cost and Profit: Cost of Shipping</b> [QSO-320-02]	Meets “Proficient” criteria and demonstrates an insightful rationale for appropriately employed Excel functions (100%)	Calculates costs of shipping to Portland and Riverside by pallets and frequency and illustrates results in a table (85%)	Calculates costs of shipping to Portland and Riverside by pallets and frequency, but does not illustrate results in a table, or results contain inaccuracies or rationale is not provided (55%)	Does not calculate costs of shipping (0%)	4
<b>Organizational Cost and Profit: Cost of Production</b> [QSO-320-02]	Meets “Proficient” criteria and demonstrates an insightful rationale for appropriately employed Excel functions (100%)	Calculates the cost of production for the wine varieties sold in Portland and Riverside and illustrates results in a table (85%)	Calculates the cost of production for the wine varieties sold in Portland and Riverside, but does not illustrate results in a table, or results contain inaccuracies or a rationale is not provided (55%)	Does not calculate the cost of production (0%)	4

Critical Elements	Exemplary	Proficient	Needs Improvement	Not Evident	Value
<b>Organizational Cost and Profit: Gross Profit</b> [QSO-320-04]	Meets “Proficient” criteria and explanation is detailed and well-conceived (100%)	Generates a labeled table that illustrates gross profit for each variety of wine for each distribution center, explaining why this information is important for informing operation efficiencies (85%)	Generates a labeled table that illustrates gross profit for each variety of wine for each distribution center, but does not provide an explanation, or explanation is cursory, contains inaccuracies, or lacks justification (55%)	Does not illustrate gross profit through the use of a labeled table (0%)	4
<b>Organizational Cost and Profit: State Taxes</b> [QSO-320-04]		Generates a labeled table that shows the profit after state taxes (100%)	Generates a labeled table, but table contains inaccuracies (55%)	Does not generate a labeled table (0%)	4
<b>Organizational Cost and Profit: Cost and Profit Analysis</b> [QSO-320-04]	Meets “Proficient” criteria and demonstrates a complex grasp of how cost and profit analyses influence managerial decisions (100%)	Provides a summary statement that describes the inefficiencies in the organizational cost and profit analysis and explains why this information is important for influencing decisions (85%)	Provides a summary statement, but the statement description is cursory, contains inaccuracies, or lacks justification (55%)	Does not provide a summary statement that describes the inefficiencies in the organizational cost and profit analysis (0%)	4
<b>Optimizing Performance: Constraints</b> [QSO-320-03]	Meets “Proficient” criteria and demonstrates an insightful rationale for appropriately employed Excel functions (100%)	Determines the values of the constraints to be used to generate the target number when running Solver (85%)	Determines the values of the constraints to be used to generate the target number when running Solver, but response contains inaccuracies or a rationale is not provided (55%)	Does not determine the values of the constraints (0%)	8

Critical Elements	Exemplary	Proficient	Needs Improvement	Not Evident	Value
<b>Optimizing Performance: Sensitivity</b> [QSO-320-03]	Meets “Proficient” criteria and demonstrates an insightful rationale for appropriately employed Excel functions (100%)	Uses Solver to calculate the level of sensitivity of decision variables and describes the significance of the report (85%)	Uses Solver to calculate the level of sensitivity of decision variables and describes the significance of the report, but the response contains inaccuracies, or the description is cursory or missing key components, or a rationale is not provided (55%)	Does not use Solver to calculate the level of sensitivity of decision variables and does not describe the significance of the report (0%)	8
<b>Optimizing Performance: Limits</b> [QSO-320-03]	Meets “Proficient” criteria and demonstrates an insightful rationale for appropriately employed Excel functions (100%)	Uses Solver to calculate the limits of decision variables and describe the significance of the report (85%)	Uses Solver to calculate the limits of decision variables and describe the significance of the report, but the response contains inaccuracies, or the description is cursory or missing key components, or a rationale is not provided (55%)	Does not use Solver to calculate the limits of decision variables and does not describe the significance of the report (0%)	8
<b>Optimizing Performance: Solutions</b> [QSO-320-04]	Meets “Proficient” criteria and discussion demonstrates a sophisticated awareness of the needed solutions based on the needs of the organization (100%)	Discusses solutions that will maximize profits for the organization based on the Solver analysis (85%)	Discusses solutions that will maximize profits for the organization based on the Solver analysis, but response lacks clarity or solutions are illogical (55%)	Does not discuss solutions for the organization (0%)	4
<b>Articulation of Response</b>	Submission is free of errors related to citations, grammar, spelling, syntax, and organization and is presented in a professional and easy-to-read format (100%)	Submission has no major errors related to citations, grammar, spelling, syntax, or organization (85%)	Submission has major errors related to citations, grammar, spelling, syntax, or organization that negatively impact readability and articulation of main ideas (55%)	Submission has critical errors related to citations, grammar, spelling, syntax, or organization that prevent understanding of ideas (0%)	6
<b>Total</b>					<b>100%</b>