MONASH University

MONASH BUSINESS SCHOOL

ACC/ACF2400 Accounting Information Systems

Semester Two 2020

Individual Assignment

Creating a Business Dashboard to Visualize a Large Structured Dataset

Overview

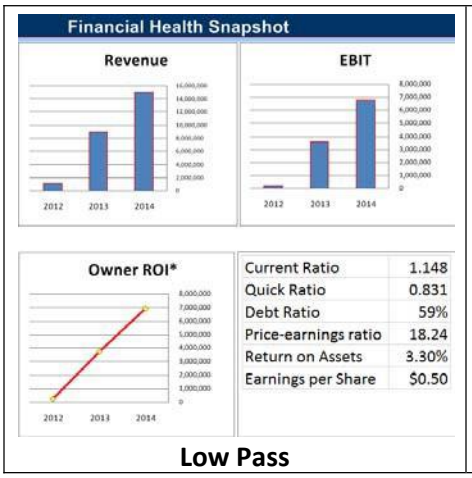
Business dashboard is an analytical tool that provide at-a-glance visualisation of business performance. The design varies considerably from one application to another, and even between businesses, but a common feature of a dashboard is that it uses graphs, coloured text, and symbols to highlight key information of the business such as trends, risks, performance, analyses. Dashboards are designed to be interactive to present clear and relevant information at management meetings, enable navigation of detailed information when required. A non-interactive dashboard can be cluttered making it difficult to show the important information or not possible to show every important information at once, not able to drill down for detail.

When designing a business dashboard, start with the end in mind. In doing so, you must identify the information you wish to present on it. Think from a business perspective. For example, what relevant information do you need to know to understand your current business status? What information do you need to strategise for improvement of business performance? Once you have outlined what you want to know, then you can work on the data required and the formulae needed for calculation, which will be useful in building your business dashboard.

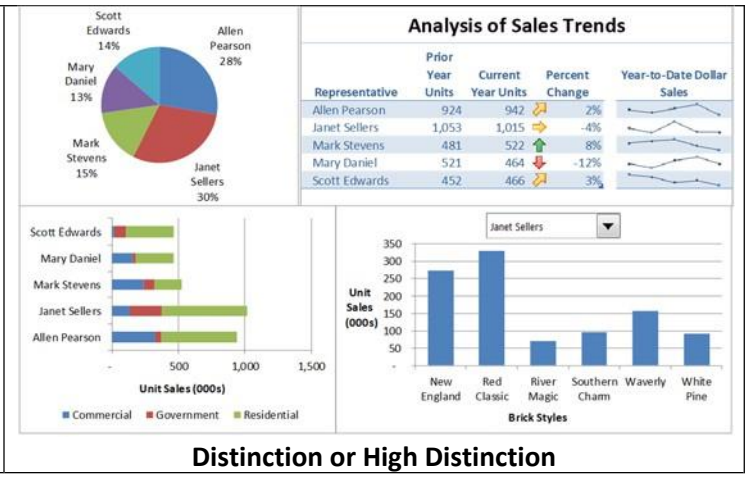
Instructions on how to build dashboards are available in different journals, magazines and online resources. For example, the ***Journal of Accountancy*** published an article that discusses how to create complex dashboard reports using Microsoft Excel 2007 and Excel 2010 (http://www.journalofaccountancy.com/issues/2011/feb/20092427.html).

The table below contrasts 2 different approaches to dashboard reporting. The example on the left shows seven (7) ratios in a non-interactive dashboard, with 3 graphs and 1 panel of numbers. The design features in the dashboard would earn a low Pass (P) - if other requirements are acceptable. The example on the right is from the *Dashboard your Scorecard* article from the ***Journal of Accountancy***. This is an interactive dashboard, the design incorporated the following features and will be awarded with higher marks:

- It is interactive (note the drop-down box in the bottom right panel to select the person shown);
- It uses appropriate graph to display proportions and performance (pie charts, bar charts, stack bar charts) with clear description of title and legends
- It uses conditional formatting icons (arrows) in the top right panel to indicate the direction of change and so makes the data easier to digest at a glance;
- It uses spark lines in the top right panel (within cell graphs) to show historical changes;



Low Pass



Distinction or High Distinction

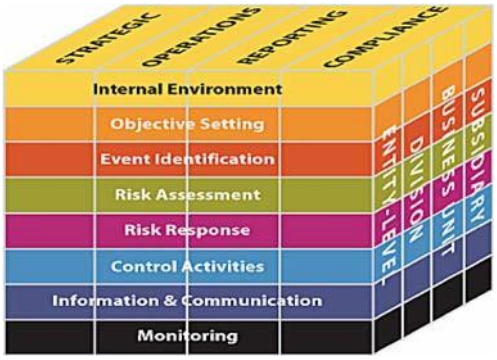
Learning Objectives Assessed

The purpose of this assignment is for you to practice designing and developing a management report using good spreadsheet design practice that would allow you to handle large amounts of structured data. You are expected to conduct some independent research to find out how to create different elements of your dashboard.

Specific unit learning objectives (see unit guide) addressed by this assignment include:

Objective 4: Synthesise design principles to develop financial models that assist in decision-making.
Objective 5: Apply critical thinking, problem solving and communication skills to analyse, evaluate and interpret business processes and the accounting data that is generated.

In terms of the unit content, this assignment is based on a set of practice guidelines that are used widely, usually referred to as the COSO ERM framework, and shown below. This assignment focuses on the last two components of the framework.



Information & Communication:
What information you need and how should it be communicated?
Monitoring:
How will you monitor what is happening?

General Instructions

Business context for this assignment:

You have recently been appointed as a graduate business analyst consultant in a large retail company *SCM-Athletics Solutions* that works in the area of logistics and commercial distribution of sports equipment and apparel. The company specialises on the sales and delivery of athletic equipment globally. Facing the challenges of COVID-19, SCM-Athletics Solutions is trying to reassess its global logistics strategy and market channels. For this, it analyses its global logistics and sales operations over the year 2019. Prior to this, the company's sales and logistics data have been analysed at a more aggregate level for the purposes of financial and strategic planning. This is the first time that the company's management decided to perform

such a "deep dive" into the company's sales and logistics data, so they are keen to better understand their business with the view to reconsider their strategic priorities.

Outline of your assignment as business analyst consultant at *SCM-Athletics Solutions*

As a newly appointed graduate business analyst consultant, you were asked to familiarise with the dataset titled "SupplyChainData" and use the data[1] presented in this dataset for further data analysis and visual analytics manipulations outlined below.

Your main task is to produce an interactive business dashboard and a range of analyses which mostly correspond to the requirements outlined by company's top management.

First, the top management would like to have a better understanding in financial and logistics performance of the company in 2019. Next, given the increasing global risk landscape in 2020, top management are especially interested in identifying areas of high variance (variability) in its financial and logistics performance. They can then concentrate their efforts on reducing the variance where appropriate.

The top management decided to give you an opportunity to apply your data analytics skills and get further insight on company's sales, distribution channels, markets, risks, areas of high variance – in general, the key factors that shape and/or contribute to SCM-Athletics Solutions strategy planning and implementation.

Top management proposed that you investigate the 2019 data provided, while focusing on a number of outputs that have traditionally been of interest to the company. You are asked to present those outputs while structuring the presented data according to a number of criteria specified below. In addition, top management requested that you propose two additional analytical insights (i.e. two additional analyses / visual outputs) based on your investigation of the dataset, on the top of those outputs that were specified by management. In summary, you are required to investigate the data associated with each of these outputs and to produce a visual report supporting your analyses and further recommendations:

- Monthly sales in both dollars and quantity (structured/analysed by order region, by product family)
- Gross Profit contribution (structured/analysed by order region, by product family)
- Cost of Goods Sold (COGS) and Gross Profit (GP) margins (structured/analysed by order region, by product family)
- Shipment status (i.e. Real vs Scheduled days for shipment showing count of "Late Shipment[2]" vs "In-Time Shipment"; structured/analysed by months, by region and by product family)[3]
- Delivery status (structured/analysed by market and by order region)
- Key area(s) of high variability which might be relevant for strategy planning and redesign
- Two analytical insights suggested independently by you (two extra analyses not covered by the above analyses)

Further, you may wish to allow the dashboard user to select items within categories. It must provide the dashboard user with useful extra information that would not be apparent without the categories, and must do so in an easy to understand way.

In order to conduct the above analyses, you may need to add the following calculated columns per each order in the "SupplyChainData" sheet: (1) Sales, (2) Cost of Goods Sold (COGS), (3) Gross Profit (GP) margin,

[1] The Company's headquarters are in Milan, Italy, so the geographical locations in the dataset provided to you are in Italian. You don't need to translate those in English.

[2] Note: This is different from '*Late Delivery Risk*' field.

[3] Note: This analysis should use data from '*Shipment Status*' field which should be calculated in the '*SupplyChainData*' sheet. "Late shipment" if the order was shipped later than the scheduled shipment date, "In-time shipment" if the order was shipped before or on the schedule shipment date.

(4) Days for shipment (real) (i.e. how many days it actually took for the company to ship out the order after the order has been received), (5) Shipment Status (i.e. "Late shipment" if the order was shipped later than the scheduled shipment date, "In-time shipment" if the order was shipped before or on the schedule shipment date.)

Note, documentation and clear layout in the Calculation sheets are required for proper reporting and accountability. In terms of the tools supplementing your analyses, **you are expected to produce:** at least one histogram, and at least five pivot charts (including at least one radar chart and at least one combo chart).

The analyses are expected to be supplemented by a concise *Executive Summary* which outlines the key insights from the performed visual analyses in light of the possible updates of the SCM-Athletics Solutions' strategy.

This assignment is designed to be completed using Microsoft Excel for Windows. Bear in mind that the teaching team will be using Excel for Windows to mark the assignment. We realise that some of you might be using other operating systems. Normally, this should not cause any issues in addressing the tasks required in this assignment.

Regarding the formatting, please ensure that each worksheet of your completed assignment is viewable when shown on one page (via Print Preview). In the Marking Rubric this requirement is stated as "Dashboard report prints legible on one page".

Most of the Excel features and command you will use are available in lecture notes. There are considerable amount of information available on the Internet. For example, a simple Google search generated these results:

- Conditional formatting: 1,850,000 results for Excel 2016
- Conditional formatting data bars or icons: 306,000 results for Excel 2016
- Slicers: 407,000 results for Excel 2016
- Excel 2016 Form controls/Active X controls: 31,000,000 results (a very popular topic)
  Note, Excel's form controls are available on the Developer tab, which is hidden until you right click on the top menu, select Customize the Ribbon, and the check the Developer option.

This is a major assignment in which you are expected to put in a substantial amount of work to obtain higher grades. IMPORTANT: Any assignment-related queries related to the technical or organizational part of the assignment should be discussed with the teaching team ONLY via Moodle forum rather than by email.

This is an **individual** assignment. You are required to use the data set (**ACC_ACF2400_Assignment2_SCM-Athletics.xlsx**) supplied with this guide under ***Assessment Task 3: Assignment 2*** section on Moodle.

Acknowledgements:

The dataset is provided by Fabian Constante
Instituto Politecnico de Leiria Escola Superior de Tecnologia e Gestao

The dataset used in this assignment was updated from its original source.

Submission Date/Time & Procedures

Submission Date/Time: ***Monday 26 October 2020, 11am***. Penalties apply for late submission.

Submit the Excel file via the **Assignment 2** link under ***Assessment Task 3: Assignment 2*** section on Moodle.

Marks

The assignment is worth **17%** of the total marks for this unit (see Marking Rubric below to understand how your assignment will be assessed). Please note, not studying the Marking Rubric in sufficient detail is one of the common causes for missing out on easy to get marks in this assignment. Hence, we strongly

recommend to study this rubric in detail, at minimum twice: when beginning your work on the assignment and when cross-checking the complete draft of your assignment.

Mark breakdown per task	
Task	**Marks**
Instruction	8
Executive summary	26
Dashboard	26
Calculation worksheets	40
Total	**100**

Required

Save your file as **ACC_ACF2400_<Your Name_StudentID>_Dashboard.xlsx.** The completed assignment must contain the following 9 worksheets:

- Instruction (see Note 1 below)
- ExecutiveSummary (see Note 2 below)
- Dashboard (see Note 3 below)
- SupplyChainData
- Calculation worksheets (see Note 4 below):
    - (i) Cal1_MonthlySales
    - (ii) Cal2_Rgn_GrossProfit
    - (iii) Cal3_COGS_GP
    - (iv) Cal4_ShipmentStatus
    - (v) Cal5_DeliveryStatus
    - (vi) Cal6_KeyArea_Variability
    - (vii) Cal7_MyAnalysis1
    - (viii) Cal8_MyAnalysis2

Notes:

1. Prepare an **Instruction** worksheet that explains how to use your model. Instructions should be brief. Include the following information:
    - Your name and name of the company
    - Dashboard objective: Explain the purpose of the dashboard you created
    - Describe the nature of investigations you conducted and explain how you used them in the Dashboard that you prepared.
    - Indicate **location** in the spreadsheet and explain the **purpose** of **key analyses for 2019** to be presented at the management meeting:
        - Key Analysis 1: Monthly sales in both dollars and quantity, by each region and by product family
        - Key Analysis 2: Gross profit contributed by each region and by each product family
        - Key Analysis 3: Cost of Goods Sold (COGS) and Gross Profit (GP) margins by each region and by each product family
        - Key Analysis 4: Shipment status by each region and by product family
        - Key Analysis 5: Delivery status by each market and by each region
        - Key Analysis 6: Key area(s) of variability
        - Key Analyses 7&8: Two extra analyses suggested by you
2. **Executive summary (recommendation to top management) based on the performed analyses:** on SCM-Athletics Solutions' strategic priorities in 2020 (500-600 words). Think broadly. The recommendation is expected to be built on the key insights from the performed visual analyses in light of the possible updates of the SCM-Athletics Solutions' strategy.
3. Construct an interactive professional Dashboard in the **Dashboard** worksheet.
4. Perform all the necessary data processing for each of the key analyses in the **Calculation** worksheets provided. Data processing may include PivotTables, PivotCharts, Histograms, Excel Table, Slicers, formulae and so on. You need to decide on the appropriate type of PivotCharts to use (although you are required to include at least one radar chart and one combo chart), and Slicers to include.