MACQUARIE University

BUSA8031 – Business Analytics Project

Unit Coordinator: Dr Hamed Jafarzadeh Semester 2, 2023

Assessment 2: Client Briefing Report

Word limit:	2000-3000 words
Weighing:	20% of total mark
Output Format:	docx or PDF file to be submitted via iLearn
Type:	Individual work
Submission deadline:	See iLearn (Assignment Table on top of the page)

Purpose (the 'Why') of this assignment and the skills to develop

One of the main tasks of a *business analyst* is to analyze and examine the situation of organizations/projects and provide technology solutions to address problems. This requires a good understanding of technologies, a good knowledge of the capabilities and benefits that various technologies have to offer, and also familiarity with principles and frameworks for evaluating technologies in a systematic manner. This is quite an advanced skillset in the market and is considered to be a senior level BA position. A common title for such senior BA position is *Solution Architect*. A Solution Architect is "a professional who solves complex problems in an organization by designing or modifying technology architecture and testing the integration of software in these designs for correct functionality"[1].

The purpose of this assignment is to develop your skills and experience in this domain, and embark you on the task of analyzing and recommending a data/business analytics solution to enterprises. This is a good entry-level exercise on the task of offering technology solutions to organizations and becoming familiar with the complexities and challenges associated with this task.

[1] From Solution Architect Job Description

The Organisation and Your Task

Client Organisation: Best Bike Ever (BBE)

Best Bike Ever (BBE) is a company[2] started as a local family business more than 40 years ago in North America. The company sells a wide range of bikes, bike parts and accessories, as well as sport clothing and equipment related to biking. BBE grew rapidly in its first decade and soon expanded to an international business after few years with a dozen branches across several countries.

The CEO of BBE has recently been to a conference about Business Analytics where several companies shared their fantastic experiences and stories on how analytics help them to achieve business value and enhance competitive advantages. The BBE CEO was amazed to see how data-driven fact-based insights from analytics can improve decision-making in organisations which in turn increase profitability, performance and success. Upon returning from the conference, he placed a high priority on initiating an analytics project in BBE.

As a group of talented graduates from Macquarie University who have successfully completed your degree in business analytics and have learned how to use relevant tools and techniques, your task is to embark BBE on **Analytics!**

Your Task

BBE management is keen to produce a dashboard (or business intelligence) solution that the managers and staff of BBE can use to access business data (sales data, markering data, HR data, etc) in a visual and interactive way. BBE recognizes that a variety of solutions and platforms for building managerial dashboards are available in the market. Examples range from PowerBI and Tableau to QlikSence and even in-house development of dashboards with technologies such as R or Python. They are however unsure about the differences between these competing vendors and cannot decide which product they should choose for BBE.

BBE, therefore, tasks you to investigate these platforms, critically analyse and compare them, and eventually provide a report with your recommendations on which platform to use, and why.

In doing so, you should consider and/or do the followings:

[2] It is not a real company! Don't search for it on the Internet! ☺

1) Four solutions/platforms to be assessed:
You should consider and analyse four technologies/platforms/solutions, one of which should be Qlik Sense (on which you will be receiving training in this semester). Another one should be in-house development of a dashboard using technologies such as Python or R. The other two could be your choice but suggestions are PowerBI and Tableau (two market leaders).

2) Demoing the four solutions:
To ensure the depth and quality of your analysis, your manager in BBE asks you to produce a brief demo dashboard with each of those four products and demonstrate the output to BBE managers and staff. In doing so, use a dataset of BBE data available on iLearn (under Assignment 3 > BBE Dataset.xlsx). It is a Zip file containing six Excel tables holding the Internet sales information of BBE between 2017 to 2020. Use this dataset to create demo dashboards for BBE with those four platforms solutions, and evaluate the platforms accordingly. To better understand the data, see Appendix 1 for data dictionary.

3) Criteria/framework for analysis
When it comes to evaluating solutions, it is very important (and also a common practice in the industry) to first establish some criteria or framework for evaluation. Having a set of established criteria ensures that the evaluation is comprehensive (not missing any important factor) and reliable (considering best practices). Therefore, in this assignment, you need to search for and find some good sources that give you some criteria for evaluating analytics solutions. The sources could be academic papers, white papers and reports from the industry parties, consultant's publications and report, and so on. Just make sure the sources you use are reliable. Some random information from random blogs is not a good source to rely on, is it? In your final report, you should have an explicit section explaining what source (or sources) you used to establish the basis for your analysis. You are free to combine and merge several sources together to establish a solid basis for your analysis. Just make sure to very clearly explain what sources you used (provide clear citation, weblink, etc), if and how you integrated different sources (or used a single source only), and why you used that source(s). In short, convince the reader of your report that you developed a good basis (criteria, framework) for your analysis.

You are expected to deliver a professional piece of business report. Consult this MQ guide on StudyWISE for how to write a good business report: Reports: Reports (mq.edu.au). Also search the internet for finding tips and good examples of business reports. While you have plenty of flexibility, your report is expected to have:

- A good execute summary, introduction, and conclusion.
- Screenshots of the demo dashboards developed with different platforms.
- Clear explanation of how evaluation criteria were put together, and from what source or sources.

Other Important Notes

- No detailed instruction for font type, size, line space, margin, etc! … As a postgrad University student, however, you are expected to deliver a professional piece of work that is clear, neat and well organised. Don't forget to include page numbers. Figures and tables should always be numbered and captioned, and you should refer to them at least once in the body of your writing.

Using justified text is visually appealing. A good title page, numbering pages, and reasonable page margin are always good practices.

- Clarity of language, layout and general presentation is an assessable aspect of the assignment. The look and feel of the output DOES matter (as it always matters in real-world projects when you produce an output). Always try to impress the reader of your document (which in many cases in real-world projects is your manager or your client) by professionalism, aesthetic, and an appealing look of your work. This is up to you to find out how to do that! Search around the internet, get ideas from good samples, use your own sense of art, etc, etc, etc!
- Remember that your document must look like a professional piece of work. Remember that you are presenting it to your managers of the client companies. Try to impress them by the quality of your work! Managers always care about the appearance and small details.
- This is an individual assignment. Group work is not allowed, and your report should be your and only your work. The assignment is to be your own analysis and must reflect your own understanding.
- MQ's provisions regarding Academic Integrity fully apply. Please refer to the relevant section in the Unit Guide for important information.
- Late submission is allowed but will be entitled to penalty as per Unit Guide.
- Correct referencing style and formatting for in-text citations and reference list is expected. References are not counted in the word limit. Any referencing style is acceptable as long as correct, accurate, and consistent.

Submission

Submit your report as a Microsoft Word (docx) or PDF file via iLearn. Find the submission link under Assessment 2.

You are allowed to have appendixes to the report. Preferably include them in the single file with the report. If not possible, appendixes could be separate files and submitted along with the main Report file.

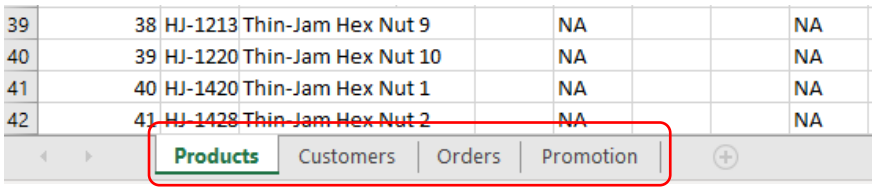
Include a headshot photo of you on the cover page of the report.

Marking criteria

Criteria	Value
Analysis, Content - Applying and developing a useful, informative, and insightful analysis appropriate - Incorporating adequate, relevant, and meaningful analysis - Solid, well-established, and well-researched set of criteria/framework/basis for evaluation of different platforms - Reasonable and adequate (brief) demo with different platforms - Informed and convincing discussion/argument - Sound, convincing, and evidence-based recommendations that stem from the analysis **Argument Development** - Logical and well-constructed argument/discussion in the report (each paragraph argues one specific point, clear line of argument, good cohesion between paragraphs, clear main thesis statement for each paragraph) - Avoiding irrelevant and off-track information/discussion - Avoiding unsupported statements, claims, and discussions	**70%**
Structure and presentation of report - Appropriate business report structure - Correct spelling, punctuation and grammar - Clear, logical, concise and professional presentation and writing style - Clear and appropriate language and tone for a professional piece of writing - Adhere to the word count limit - Visually appealing - Good readability and proper use of pictures/tables (clearly referring to pictures/tables with numbers, and captioning them properly). - Readable and good quality images in the report	**30%**
Total	**100%**

Appendix 1: Explanation of the data in the dataset (Data Dictionary):

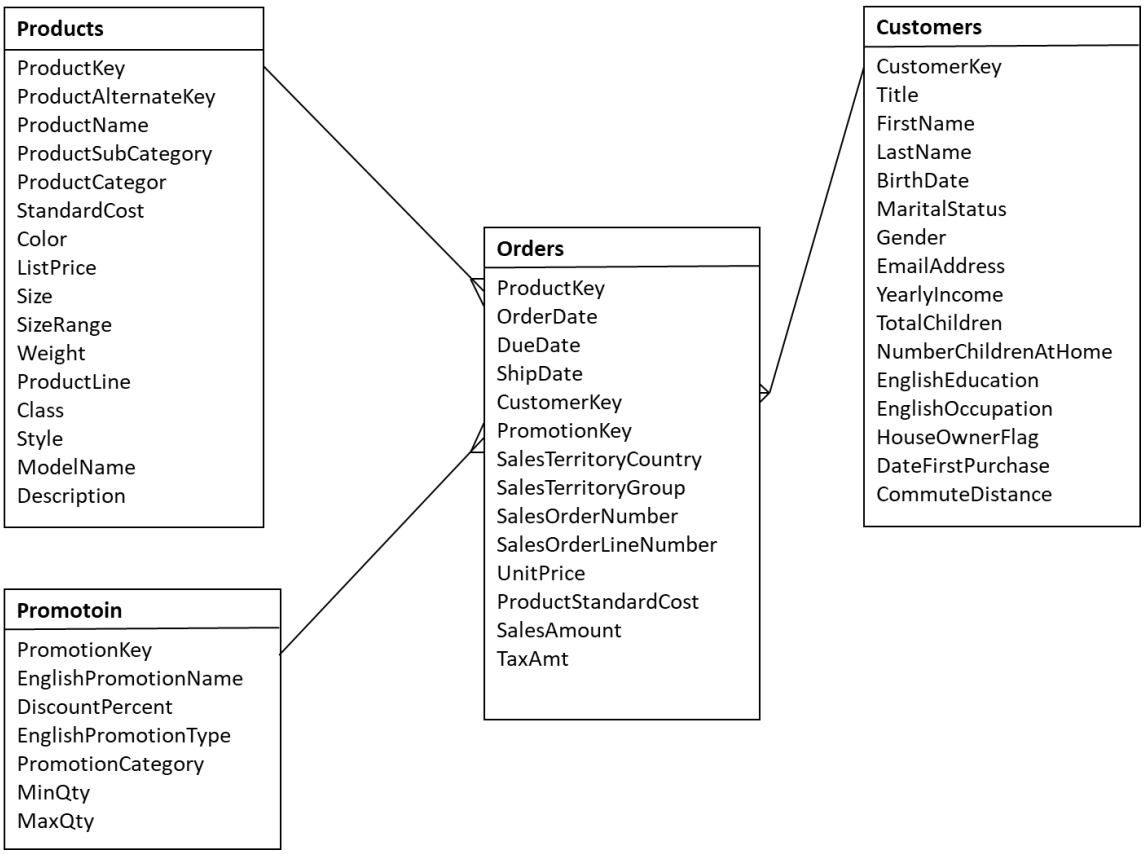
This appendix explains the data in the **BBE Dataset.xlsx** dataset file (available on Stream). This Excel file contains four different sheets which holds the Internet sales information of BBE: Products, Customers, Orders and Promotion



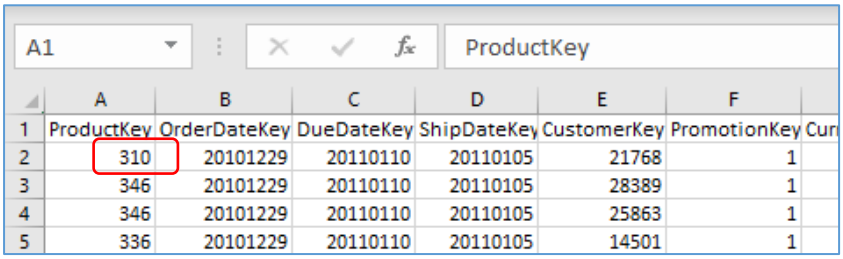
This is the explanation of the four sheets:

Table Name	Description
Orders	Data of internet sales. It includes the details of all internet sales transactions during the period of 2017-2020.
Products	List of products and information about them
Customers	List of customers and information about them
Promotion	Information about promotions

Below is a diagram showing the relationship between these six tables (that together present Internet Sales information of the company):



Data in Orders table (or sheet) is connected to the other tables with a number of *Key fields*. For example, **ProductKey** field in **Products** table tells you which product was sold in each transaction. As an example, in the first line of data in **Orders,** you can see that **ProductKey** is 310:

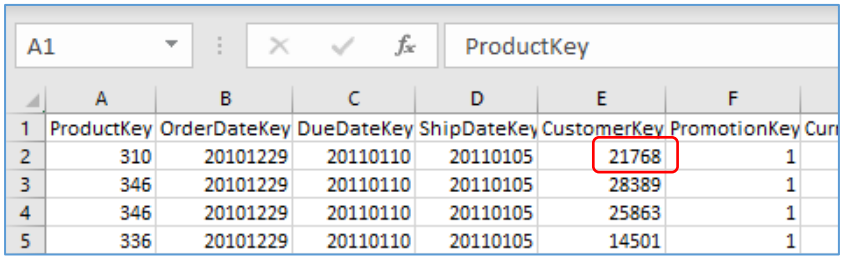


	A	B	C	D	E	F	
1	ProductKey	OrderDateKey	DueDateKey	ShipDateKey	CustomerKey	PromotionKey	Cur
2	310	20101229	20110110	20110105	21768	1	
3	346	20101229	20110110	20110105	28389	1	
4	346	20101229	20110110	20110105	25863	1	
5	336	20101229	20110110	20110105	14501	1	

Then, when you refer to the table of the **Products**, you will see that product 310 is a Road Bike and its name is **Road-150 Red, 62 :**

ProductKey	ProductAlternateKey	ProductSubcategoryKey	EnglishProductSubcategoryName	ProductCategoryKey	ProductCategoryName	WeightUnitMeasureCode	SizeUnitMeasureCode	EnglishProductName
310	BK-R93R-62	2	Road Bikes	1	Bikes	LB	CM	Road-150 Red, 62

Same logic applies to the other tables. For instance, the customer who bought product 310 is customer 21768 (in **Orders** table/sheet):



ProductKey	OrderDateKey	DueDateKey	ShipDateKey	CustomerKey	PromotionKey	Cur
310	20101229	20110110	20110105	21768	1	
346	20101229	20110110	20110105	28389	1	
346	20101229	20110110	20110105	25863	1	
336	20101229	20110110	20110105	14501	1	

From the **Customer**s table, the name of this guy is Cole A Watson, born on 19/02/1952, a male, with bachelors degree in management, etc:

CustomerKey	CustomerAlte	Title	FirstName	MiddleName	LastName	BirthDate	MaritalStatus	Gender	EmailAddress	YearlyIncome	Total	NumberChi	EnglishEducation	EnglishOccupation
21768	AW00021768	NULL	Cole	A	Watson	19/02/1952	S	M	cole1@adventure-wor	70000	5	0	Bachelors	Management

The name of the fields in the tables are quite self-explanatory, however, description for some of the fields is provided below (not all fields and all tables as many are very obvious from the names):

Orders:

Field	Description
ProductKey	The field that connects this table to Products table (code of the product)
OrderDateKey	Date of order
DueDateKey	Due date for order
CustomerKey	The field that connects this table to Customers table (code of customer)
PromotionKey	The field that connects this table to Promotion table (code of promotion)
SalesTerritoryCountry	The name of the Country of the order
SalesTerritoryGroup	The reign group of the order
SalesOrderNumber	Serial number of the order
SalesOrderLineNumber	Line number in the order (each order can have several lines/products)
UnitPrice	Unit price of the product
ProductStandardCost	The standard cost of obtaining the product
TaxAmt	Tax amount

Customers:

Field	Description
CustomerKey	Customer code
HouseOwnerFlag	Whether the customer own a house or not
CommuteDistance	How much commute per day

Product:

Field	Description
ProductKey	Product code
ProductAlternateKey	An alternative product code
ProductName	Product Name
ProductSubcategory	Sub-category of product

ProductCategoryName	Category of product
ModelName	Model of the product

Promotion:

Field	Description
PromotionKey	Code of promotion
EnglishPromotionName	Title of promotion
DiscountPercent	Discount percentage
EnglishPromotionType	Type of promotion
PromotionCategory	Category of promotion