

# **16 Appendix A – Project Proposal**

## **COMP1682 Project Proposal**

### **Analysis on the travel and behavioural patterns of UK Residents, to produce a web-based visualisation tool**

#### **BSc Business Information Systems**

**000934841**

## **1 Overview**

The Tourism industry has been growing at a significant rate, due to the improvements in the technologies, customer values and a decrease in the cost of travelling. “In the annual analysis of the global economic impact of Travel & Tourism, the sector is shown to account for 10.4% of global GDP and 313 million jobs, or 9.9% of total employment, in 2017.”(Manzo G, 2018) There are different kinds of businesses booming in the Tourism industry such as commercial airline, cruise, travel agency, tour organiser, local tourist information Centre, etc. All the businesses in this industry prioritise on one thing in common when it comes to building a successful or profitable business which is data. There are millions of data created every second and they can be used for a variety of purposes. For example, Data collected from a commercial airline business can be used for predicting what the customers’ needs/likes are and what will make them come back to use their services again.

Collecting and storing these datasets will be an easy task to accomplish. However, the biggest challenge lies in breaking these data down into useful information. The data collected cannot be understood by people who are making the business decision, and this can have a negative impact on the growth of their business. With the help of useful information, it can provide businesses to gain insight into their customer's preferences. To produce useful information such as hidden patterns or customer preferences, there are various tools/techniques which can be used but the project will focus on using business intelligence tools. “Business intelligence (BI) is a technology-driven process for analysing data and presenting actionable information to help executives, managers and other corporate end users make informed business decisions.” (Rouse M, 2017)

The project will focus on using business intelligence tools and datasets collected from an online source to produce a visualisation using a dashboard interface which will provide an insight into UK residents travel and behavioural patterns. The information gathered from this visualisation tool will be used to provide the countries with some recommendation which may improve the services they provide UK customers. This dashboard interface will then be available online and can be accessed by stakeholders who are concerned in the tourism industry in their countries, to gain an insight into the UK customers who travel to their respected countries. They can then use this information to tailor their services to accommodate UK customers.

Keywords: [Tourism, Business intelligence, Visualisation, Dashboard, Data warehousing, Spreadsheet, Tableau]

## 2 Aim

The aim of this project is to produce visualisation in form of a dashboard which will provide an insight into the travel and behavioural patterns of UK residents. The information gathered from the visualisation will be used to issue recommendations to improve the services provided to their UK customers who travel to their countries.

## 3 Objectives

The timeframe is given in [Weeks. Days]. The productive working hours per day is 6 hours.

### **Research [3.1]**

#### **3.1 Conduct a Feasibility Study [0.3]**

- 3.1.1 Research the current need for data analysis in the industry [0.3]

#### **3.2 Research about the tourism industry [0.5]**

- 3.2.1 Research why the industry is booming over the years [0.2]
- 3.2.2 Research the types of businesses in the industry [0.2]
- 3.2.3 Research the issues in the industry [0.1]
- 3.2.4 Research on data collected in this industry [0.1]

#### **3.3 Research Business intelligence and visualisation [0.6]**

- 3.3.1 Research into the advantage and disadvantage of Business intelligence and visualisation [0.2]
- 3.3.2 Research the types of visualisation [0.1]
- 3.3.3 Research types of business intelligence tools needed for the project (Data warehousing, spreadsheet and tableau) [0.1]
- 3.3.4 Compare similar work done using BI tools. [0.2]

#### **3.4 Research relevant topic areas [1.0]**

- 3.4.1 Research Jakob Nielsen heuristics [0.1]
- 3.4.2 Research Data mining and Big Data [0.2]
- 3.4.3 Research ETL Process [0.2]
- 3.4.4 Research tools, techniques and process needed to create ERD [0.1]
- 3.4.5 Research Legal, Social, Ethical and Professional issues with the project [0.1]

### **Analysis [2.4]**

#### **3.5 Business and Product Requirements [1.4]**

- 3.5.1 Produce Business requirements [0.5]
- 3.5.2 Produce Functional requirements using MoSCoW [0.3]
- 3.5.3 Produce Non-Functional Requirements [0.3]

#### **3.6 Design data warehouse model [0.5]**

- 3.6.1 Design a conceptual ER Diagram [0.2]
- 3.6.2 Design a physical ER Diagram [0.3]

#### **3.7 Design Use-Case diagram [0.1]**

#### **3.8 Design rich picture relating to the project [0.1]**

## **Design & Implementation [7.2]**

### **3.9 Create a Data warehouse [1.4]**

3.9.1 Use ETL Process to create a data warehouse using MySQL [1.3]

3.9.2 Test the Data warehouse using SQL queries. [0.1]

### **3.10 Produce prototype using Excel Spreadsheet [2.2]**

3.10.1 Produce a visual concept of the dashboard interface using low-fidelity prototyping [0.1]

3.10.2 Transfer data from the Data warehouse to excel spreadsheet [0.2]

3.10.3 Using the data, create a visualisation using pivot tables and charts to produce useful information [1.3]

3.10.4 Combine the visualisation together to create a dashboard interface [0.2]

3.10.5 Test the dashboard interface [0.1]

### **3.11 Create Final Visualisation tool using Tableau [3.3]**

3.11.1 Transfer dataset to Tableau [0.2]

3.11.2 Produce visualisation in form of a dashboard [2.1]

3.11.3 Test Dashboard interface [0.2]

3.11.4 Publish Visualisation tool to the web [0.5]

## **Testing [1.4]**

### **3.12 Produce Testing Documentation using Black and White box Testing [1.4]**

3.12.1 Test MySQL Data warehouse [0.3]

3.12.2 Test Excel Spreadsheet Dashboard [0.4]

3.12.3 Test Tableau Dashboard [0.4]

## **Evaluation and conclusion [1.3]**

### **3.13 Evaluation and conclusion for Project [1.3]**

3.13.1 Summaries the key finding from the project [0.3]

3.13.2 Produce recommendation using the information gathered from the visualisation tool [0.4]

3.13.3 Write a conclusion for the project [0.2]

3.13.4 Write future development of the system [0.1]

## **4 Project Framework or Any Methodology used**

The project will be using Agile DSDM Atern to allow flexibility when proceeding with the project. Techniques such as MoSCoW prioritisation, Timeboxing, Prototyping will be used to deliver the project on-time and only produce the necessary requirements which are needed to run the business. As the project does not have a fixed requirement, the project will make sure to be adaptable to new changes if any arises during the project stages. Following the DSDM atern principles will benefit this project by delivering on time and not compromise on the quality of the application because it will only contain the essential components needed to answer the queries. The project will use iterative development and timeboxing together to produce the visualisation tool (dashboard) which will contain the necessary functions and features and will deliver on time.

There are some disadvantages when it comes to using DSDM attern but tailoring the principles to suit this project will allow it to become successful and will encounter fewer problems. By using this methodology, the project will be able to produce a minimum viable system in a few months which can offer some benefits earlier and can gain an idea into the possibilities of the system.

## 5 Legal, Social, Ethical and Professional issues

The dataset needed for this project will be collected from an online source. The project will follow the **data protection** laws and regulations by only allowing only authorised users to gain access to the data used in this project. Also, ensuring the data cannot be accessed, modified or deleted by unauthorised users.

The project will also respect the **copyright** law by following the terms and condition, to use the dataset in their website. Before using a dataset, it is professional to request permission from the owner of the dataset to get their **consent**. Having contacted the owner of the dataset which is needed for the project, he replied by saying that the dataset can be used and adapted under the terms of (Open government license - OGL) and any dataset used in the project must need to be referenced. **(See Appendix B)**

**Equality** will be taken into consideration when analysing issues related to gender and age. **Culture related issues** should also be considered when providing recommendations to the countries because each country may have a different view of thinking.

Social issues can be both negative and positive and it is mostly controlled by people. There are many issues which stems from social issues such as work, health, education, age, etc. it is important to investigate **unemployment issues** for this project because the web application tool may change the industries perspective and can lay off their employees because of the results they found.

Ethical and professional issues will be less relevant, has the size of the work force for this project is smaller. However, if more LSEP issues arise during this project, it will be included in the report.

## 6 Planning (see appendix A)

The project will begin with waterfall methodology at the early stages of project lifecycle to provide a structure to the project, however all the other stages will use DSDM attern approach by producing the system in an incremental process and delivering on time.

The tool used for planning the project comes from traditional model which is Gantt chart. Gantt chart contains activities and tasks of a project. The Gantt chart for this project will be attached to appendix A.

## 7 Appendix A

1	Research	21 days	Thu 01/11/18	Thu 29/11/18		
2	Feasibility study	3 days	Thu 01/11/18	Mon 05/11/18		
3	Research the current need for data analysis in the industry	3 days	Thu 01/11/18	Mon 05/11/18		
4	Research about the travel & tourism industry	5 days	Tue 06/11/18	Mon 12/11/18		
5	Research why the industry is booming over the years	2 days	Tue 06/11/18	Wed 07/11/18		
6	Research the types of businesses in the industry	2 days	Wed 07/11/18	Thu 08/11/18		
7	Research the issues in the industry	1 day	Mon 12/11/18	Mon 12/11/18		
8	Research on data collected in this industry	1 day	Mon 12/11/18	Mon 12/11/18		
9	Research Business Intelligence and visualisation	6 days	Wed 14/11/18	Wed 21/11/18		
10	Research into the advantage and disadvantage of Business Intelligence and visualisation	2 days	Wed 14/11/18	Thu 15/11/18		
11	Research the types of visualisation	1 day	Fri 16/11/18	Fri 16/11/18		
12	Research types of business intelligence tools needed for the project (Data warehousing, spreadsheet and tableau)	1 day	Mon 19/11/18	Mon 19/11/18		
13	Compare similar work done using BI tools.	2 days	Tue 20/11/18	Wed 21/11/18		
14	Research relevant topic areas	6 days	Thu 22/11/18	Thu 29/11/18		
15	Research Jakob Nielsen Heuristics	1 day	Thu 22/11/18	Thu 22/11/18		
16	Research Data mining and Big Data	2 days	Thu 22/11/18	Fri 23/11/18		
17	Research ETL Process	2 days	Mon 26/11/18	Tue 27/11/18		
18	Research tools, techniques and process needed to create ERD	1 day	Wed 28/11/18	Wed 28/11/18		
19	Research Legal, Social, Ethical and Professional issues with the project	1 day	Thu 29/11/18	Thu 29/11/18		
20	Analysis	16 days	Fri 30/11/18	Fri 21/12/18	1	
21	Business and Product Requirements	11 days	Fri 30/11/18	Fri 14/12/18		
22	Produce Business requirements	5 days	Fri 30/11/18	Thu 06/12/18		
23	Produce Functional requirements using MoSCoW	3 days	Fri 07/12/18	Tue 11/12/18		

24	Produce Non-Functional Requirements	3 days	Wed 12/12/18	Fri 14/12/18		
25	Design data warehouse model	5 days	Fri 14/12/18	Thu 20/12/18		
26	Design a conceptual ER Diagram	2 days	Fri 14/12/18	Mon 17/12/18		
27	Design a physical ER Diagram	3 days	Tue 18/12/18	Thu 20/12/18		
28	Design Use-Case Diagram	1 day	Fri 14/12/18	Fri 14/12/18		
29	Design rich picture relating to the project	1 day	Tue 18/12/18	Tue 18/12/18		
30	Design & Implementation	51 days	Mon 24/12/18	Mon 04/03/19	20	
31	Create a Data warehouse	11 days	Mon 24/12/18	Mon 07/01/19		
32	Use ETL Process to create a data warehouse in MySQL	10 days	Mon 24/12/18	Fri 04/01/19		
33	Test the Database using SQL queries.	1 day	Mon 07/01/19	Mon 07/01/19		
34	Produce prototype using Excel Spreadsheet	16 days	Tue 08/01/19	Tue 29/01/19	31	
35	Produce a visual concept of the dashboard interface using low-fidelity prototyping	1 day	Tue 08/01/19	Tue 08/01/19		
36	Transfer data from the database to excel spreadsheet	2 days	Tue 08/01/19	Wed 09/01/19		
37	Using the data, create a visualisation using pivot tables and charts to produce useful information	10 days	Fri 11/01/19	Thu 24/01/19		
38	Combine the visualisation together to create a dashboard interface	2 days	Fri 25/01/19	Mon 28/01/19		
39	Test the dashboard interface	1 day	Tue 29/01/19	Tue 29/01/19		
40	Create Final Visualisation tool using Tableau	24 days	Wed 30/01/19	Mon 04/03/19	31	
41	Transfer dataset to Tableau	2 days	Wed 30/01/19	Thu 31/01/19		
42	Produce visualisation in form of a dashboard	15 days	Fri 01/02/19	Thu 21/02/19		
43	Test Dashboard interface	2 days	Fri 22/02/19	Mon 25/02/19		
44	Publish Visualisation tool to the web	5 days	Tue 26/02/19	Mon 04/03/19		
45	Testing	11 days	Tue 05/03/19	Tue 19/03/19		
46	Produce Testing Documentation using Black and White box Testing	11 days	Tue 05/03/19	Tue 19/03/19	30	

47	Test MySQL database	3 days	Tue 05/03/19	Thu 07/03/19	
48	Test Excel Spreadsheet Dashboard	4 days	Fri 08/03/19	Wed 13/03/19	
49	Test Tableau Dashboard	4 days	Thu 14/03/19	Tue 19/03/19	
50	Evaluation and conclusion	10 days	Wed 20/03/19	Tue 02/04/19	45
51	Evaluation and conclusion for Project	10 days	Wed 20/03/19	Tue 02/04/19	
52	Summaries the key finding from the project	3 days	Wed 20/03/19	Fri 22/03/19	
53	Produce recommendation using the information gathered from visualisation tool	4 days	Mon 25/03/19	Thu 28/03/19	
54	Write conclusion for project	2 days	Fri 29/03/19	Mon 01/04/19	
55	Write future development of the system	1 day	Tue 02/04/19	Tue 02/04/19	

## 8 Appendix B



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### Do I need permission to use Dataset for an Undergraduate Project .

1 message

**Social Survey** <socialsurveys@ons.gov.uk>  
 Reply-To: socialsurveys@ons.gov.uk  
 To: kk5572a@greenwich.ac.uk

18 October 2018 at 08:19

#### Reference - Enquiry Number 22626

Hello Kogul,

Thank you for your email. Under the terms of the Open Government Licence (OGL), you are free to use and adapt the data set you link to (or any other data available on our website). We give the following guidance:

Users reproducing ONS content without adaptation should include a source accreditation to ONS: **Source: Office for National Statistics licensed under the Open Government Licence v.3.0.**  
 Users reproducing ONS content which is adapted should include a source accreditation to ONS: **Adapted from data from the Office for National Statistics licensed under the Open Government Licence v.3.0.**

The reference to the OGL should link to <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/> if possible.

I hope this is helpful.

Regards,

Paul Bloomfield,  
 Data Advice and Relations Team,  
 ONS Social Statistics.

Dear Sir/Madam,

My name is Kogul Kuganathan and I have come across the data set for tourism industry which I am interested in using for my Undergraduate project. I would like to know if I am allowed to use your data set.

This is the link to the dataset that I am thinking of using: <https://www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/datasets/overseastravelandtourism> by [Giles Horsfield](#)

Thank you,  
 Kogul Kuganathan

## 9 Initial References

- Rouse, M. (2017). *business intelligence (BI)*. [online] SearchBusinessAnalytics. Available at: <https://searchbusinessanalytics.techtarget.com/definition/business-intelligence-BI> [Accessed 24 Oct. 2018].

- Manzo, G. (2018) *TRAVEL & TOURISM ECONOMIC IMPACT 2018 WORLD*, World Travel & Tourism Council, p. 3, [online] Available at: <https://www.wttc.org/-/media/files/reports/economic-impact-research/regions-2018/world2018.pdf> (Accessed 26 October 2018).
- Horsfield, G. (2018). *Overseas travel and tourism, quarterly - Office for National Statistics*. [online] Ons.gov.uk. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/datasets/overseastravelandtourism> [Accessed 25 Oct. 2018].
- Nationalarchives.gov.uk. (2018). *Open Government Licence*. [online] Available at: <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/> [Accessed 25 Oct. 2018].

## 10 Initial Bibliography

- LibGuides: Visualisation and Interactive Media: What is Visualisation?, (2018) *Libguides.library.curtin.edu.au*, [online] Available at: <https://libguides.library.curtin.edu.au/c.php?g=388681&p=2688784> (Accessed 25 October 2018).
- What Are Business Intelligence (BI) Tools? | Microsoft Azure, (2018) *Azure.microsoft.com*, [online] Available at: <https://azure.microsoft.com/en-gb/overview/what-are-business-intelligence-tools/> (Accessed 25 October 2018).
- Tableau Public, (2018) *Tableau Public*, [online] Available at: <https://public.tableau.com/en-us/s/> (Accessed 25 October 2018).
- Roser, M. (n.d.) Tourism, *Our World in Data*, [online] Available at: <https://ourworldindata.org/tourism> (Accessed 31 October 2018).
- Caine, M. (2011) What is DSDM Atern? | M.C. Partners & Associates, *Mcpa.biz*, [online] Available at: <http://www.mcpa.biz/2011/08/what-is-dsdm-atern/> (Accessed 26 October 2018).
- Legal, social, ethical & professional issues (LSEPI) | BCS - The Chartered Institute for IT, (2017) *Bcs.org*, [online] Available at: <https://www.bcs.org/content/ConWebDoc/57831> (Accessed 27 October 2018).
- Pernice, K. (2016) UX Prototypes: Low Fidelity vs. High Fidelity, *Nielsen Norman Group*, [online] Available at: <https://www.nngroup.com/articles/ux-prototype-hi-lo-fidelity/> (Accessed 28 October 2018).