Business need examples

2021-22 coursework spec

The coursework specification was slightly different last year.

Define the business need

In the real world a business or organisation would have a need that motivates your project. Most data science processes include a step that involves understanding this 'business need'. Many software development projects also start with a problem statement or project vision/concept.
In this project you will have to define that need/motivation/concept yourself. You will have been given a data set. That data set might be of interest to a business or to members of the public. Given your allocated data set, consider questions such as:

- What problem(s) are you trying to address? What are the benefits that are likely to result from addressing the problem?
- Who might be interested in such data i.e. who would the target audience be?
- What questions might the data help to answer for your target audience? How might having the answers to such questions be useful?

Include relevant items in your portfolio that provide:

- a definition of the problem
- a description or profile of the target audience
- the questions you will attempt to answer using visualisations from your data set

You can optionally include anything else that you think is relevant in defining the business need.

Part 1: Problem statement

Good example

Tutor comment

The problem is clearly defined and makes use of an appropriate structure. There is a useful level detail that describes the problem that the project intends to provide a solution for. The student also supported their work with appropriate references.

Student response

Problem definition
Problem: Transport for London (TfL) is currently faced with a situation that is affecting the lives of 9 million Londoners according to the Mayor of London [9]. Since the arrival of the Covid-19 pandemic, TfL has been struck with a decrease of public transport use of great magnitude over the past 2 years. Consequently, TfL has lost out on potential revenue and profits fell so exponentially that the government had to assist with £1.2
billion [10]. Additionally, the other major point of concern is public health and safety regarding the spread of the virus which contributes to closures and delayed services.
Impact: The decrease in use of public transport has severely hurt the Underground especially, for example from February 2020 all night tubes were cancelled which resulted in

a 50 million less journeys. As a result, 65% of professionals were forced to work at home or use personal transport. The public transport in London was blamed for incompetence in managing the Covid situation and contributing to safety issues on journeys [11]. The problem affects both TfL and the riders.
Timeframe, location, and trend: Initially, the problem was noticed around February 2020 when the first lockdown was enforced nationwide by the government. The data shows the pandemic shook all methods of transport (with the exception of bus). Trends have presented that the number of journeys is falling at a slight slope. However, there is an unpredictable nature to this situation which is personified by future virus variants and lockdowns. A long-term solution (>5 years) is needed to account for the unpredictable nature of the pandemic.
Goals: TfL want to achieve levels of public transport use that match the pre-pandemic times. To quantify, the Underground must return to 100 million monthly journeys and the Overground should be at 14 million journeys per month. As these two transport types are the worse affected by the pandemic in terms of usage.
Vision: In terms of timeframe, TfL desire for their services to return to normal levels within 6 months of a solution implementation. Furthermore, the web app must provide support and effectiveness for a further 5 years to come.
Importance: Resulting from addressing the problem, the number of monthly journeys made on TfL will return to normal and the profits made by TfL will increase to a sustainable level where they can afford to pay their staff, maintenance and develop the transport network of London. Also, it will allow for the working people of London to attend their jobs across the city and raise the productivity and local economy.
References: [9] https://data.london.gov.uk/dataset/londons-population [10] https://tfl.gov.uk/info-for/investors/announcements [11] https://www.onlondon.co.uk/new-polling-most-londoners-blame-covid-or-government-for-tfl-financial-woes-back-ltns-and-are-satisfied-with-sadiq-khan/

Weak example

Tutor comment

This is succinct and gives a reasonable understanding of the problem and was relevant to their data set. It didn't make use of any particular framework or technique; if the student had done so then it might have prompted them to consider more detail that could have been added to give a clearer picture of the problem to be addressed.

Student response

Each country has different laws, and they will change over time, so it is necessary for people who need to conduct business across those countries or want to run a business in a long time period to understand the laws and regulations of different countries in a timely and accurate manner.

Part 2: Target audience

Good example

Tutor comment

The student used an online persona template to help them structure their work, however where other students failed to adapt the templates to their particular project, this student has added their own content and made it specific to their project. By reading this persona

you get a good sense of the person that the student will later be designing their app for. This relates to the problem statement shown in part 1.

Student response

Meekz Manny

age: 34
residence: Greater London
education: MEng Mechanical Engineering UCL
occupation: Consultancy
marital status: Married, three children

"I want simple, quick and direct solutions to my journeys"

"I spend most my day at the office in central London and visiting clients across the city."

Comfort With Technology

INTERNET

SOFTWARE

MOBILE APPS

SOCIAL NETWORK

Criteria For Success:

Full working days at the office make me feel successful. The Covid-19 lockdown really set me back in terms of productivity and drive. I believe in planning and organisation skills that help deliver great products. Also, time and punctuality is a big part of my success as a professional in London.

Needs

- To quickly determine the fastest route for journeys.
- Find out about closures or delays.
- To be provided with alternate travel routes.
- To be assured of Covid safety measurements
- To be at work by 9 am everyday and home by 6pm.
- Check ticket fares and costs.

Wants

- To have live access to train times and seat spaces on board.
- To be able to give feedback on journeys.
- Access the app at any time of the day.
- Use the app on mobile and computer devices with access to wifi.
- Spend no more than 10 minutes on it a day.
- Reward scheme for loyalty to TfL.

Values

- Organisation and time keeping
- Social interactions with other people.
- Learning about new technology.
- Respect and safety within professional environments.

Fears

- Speed of apps being too slow and a waste of time.
- Over complicated layout with non important information.
- Personal privacy

MOBILITY LABS

Weak example

Tutor comment

The response does state who the target audience is and some information on what they need, however it lacks detail. It doesn't really give a clear picture of who the app is to be designed for and would be of limited use in helping to guide the design and other activities during the project. The student didn't make use of any software or data science techniques to define the target audience.

Student response

Target audience

Therefore, in view of the above situation, the main audiences for this problem are shared bicycle companies and the government. Companies need a rough value for sharing bicycles in order to increase revenue, and the government needs to compare actual delivery volume and estimated delivery volume to better maintain the city appearance.

Part 3: Questions

Good example

This is from the same student as in part 1 and 2. The questions relate well to the data set that the student was using, the problem statement and the target audience. They are clearly stated. The questions would be useful when the student starts to design visualisations that try to answer these. While the student would not necessarily need 7 questions for the later coursework, this gave them a range of questions to choose from so would have been useful.

Student response

1. Which public transport mode was the worst affected during the Covid-19 pandemic?
2. How much was the Tube and Overground loss in users since 2019?
3. What was the normal (average) number of journeys across the TfL transport modes per month before the pandemic?
4. How much revenue has TfL made by trains this year?
5. What mode of transport was the busiest during the pandemic?
6. Is the number of bus journeys consistent throughout the years (possible anomaly) ?
7. How long will the Covid-19 pandemic effect on train service last until return to normality?

Weak example

Tutor comment

The questions in response 1 below are reasonable and they related to the audience and problem statement. The student would need to be more specific in some cases (e.g., question 3) to use these to create appropriate visualisations.

In the response 2, the student only gives a single question. While it was not necessary to list as many questions as the student in the strong example, the detail given is insufficient.

Student response 1

1. Understand the policies in the UK/Belgium/France, such as allowance for foreign investors, tax, tax reductions

2. The current market dynamic: whether it is a good choice to bring a digital transformation company into either of the countries. How many competitors we will be having? Is the marketing growing or shrinking?
3. By analysing the data of the market, conclude whether it is worthy to enter.

Student response 2

To sum up, our main question to be answered is how to accurately estimate the demand for shared bicycles through database analysis.