

SENG3011 Engineering Workshop 3



Deliverable 4

ANALYTICS PLATFORM FOR PREDICTING EPIDEMICS: Use Cases and Requirements Report

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Business Rationale

It has been observed that the global information and technology state has drastically shifted since the COVID-19 pandemic had hit, causing a global economic shift and temporary shutdown. This was absolutely more prominently detected in the tourism and airline industries. Although with COVID-19 slowly phasing out of the international conversation as governments are making the virus endemic, it does not remove the concerns that travellers now have: how to avoid getting sick and infected abroad?

This impacts how our idea of MediTravel shapes its data platform.

COVID-19 Affecting Travel

Travellers' concerns since the start of the pandemic have been primarily connected with not contracting COVID-19, although that is just the beginning. The awareness which COVID-19 has brought onto the general public, is that disease and outbreaks occur internationally a lot more frequently than they do, however their impact varies. Regardless of this, it has made travellers a lot more wary around their safety, primarily their need of not getting sick more so now than before, now that the general public has a higher awareness of disease and outbreaks occurring more frequently than initially thought.

With the media and stories speaking about what happens to travellers when infected with COVID-19, this has made travellers desire to keep up to date on COVID-19 in their area, and by probable extension, any outbreaks that could affect them. Even as COVID-19 dies down, the state left behind leaves an impression on the minds of travellers forthcoming.

The state which COVID-19 left us with, is one where travellers desire to be better informed of things happening in the areas they are travelling to in relation to how to protect themselves against disease. COVID-19 has completely changed traveller behaviour in what they do now to prepare for their travels. Travellers are now assessing destinations more harshly in relation to the health risks they impose, such as the presence of COVID-19. By extension post-pandemic, these new raised concerns are to stay amongst travellers moving forward in the future.

Hence, we observe how MediTravel, our proposed solution could provide a unique tool to satiate the need of all kinds of travellers to assist them in being proactive while they travel to avoid health related incidents. However, in shaping how our solution translates this over, different kinds of travellers apply this sentiment differently.

User Research

As there are different types of travellers who observe the sentiment to be proactive whilst travelling, there are substantial differences in how this proactivity actually translates. For this application in what we expect from users, we have made the assumption that for our potential traveller audience of our application there are three major sub-categories: casual travellers, frequent travellers and business travellers.

User Groups

These traveller groups were mainly recognised, as they encapsulate travellers you would expect on the market which this app may provide value for. Now the outlining assumptions for the initial research outlined in the table below is that we are only considering travellers who are legal adults (i.e. 18 years or older), and that maintaining their health is one of their primary concerns. Collecting their needs and desires generally, helps us in developing the potential use-cases of our application.

Table 1. Categorisation of Needs and Desires of Certain Traveller Groups When Travelling Abroad

Type of Traveller	Needs	Desires
Casual	<ul style="list-style-type: none">- Physical Safety- Clear sources of information to obtain about destinations- Cost effective travel- Maintain health	<ul style="list-style-type: none">- Have fun at no cost of health- Not incur any additional costs whilst travelling- Plan travel to be completely budget friendly- Find sources of information to be in their language
Frequent	<ul style="list-style-type: none">- Physical Safety- Clear sources of information to obtain about their destinations- Maintain health	<ul style="list-style-type: none">- Maintain the capacity to constantly travel at no cost of health- Seek where to find help in case of emergencies in different locations- Sustain living abroad
Business	<ul style="list-style-type: none">- Physical Safety- Clear sources of information to obtain about destinations- Understand local cultures and customs to help build business opportunities	<ul style="list-style-type: none">- Maintain the capacity to constantly travel at no cost of health- Understand local cultures and customs to help build business opportunities

*(Matiza, 2020) and (Morar et al., 2021)

As we see in the above, physical safety and health are one of the main priorities for each type of traveller, however to what extent they are concerned about those priorities changes. Casual travellers have the desire to really get the most value for their money when abroad, and have enjoyment at no cost of health. Comparing this to frequent and business travellers, since they are often in a constant state of travel, the concern shifts to maintaining their capacity to constantly travel at no cost to health, meaning that the consequences of becoming sick is more catastrophic for these travellers. However, there is a lot more variability to the different types of travellers and tourists, such as 'high value tourists' and sub-profiles where a business traveller can be a frequent traveller as well, which will affect sub use-cases. There are also specific user sub-cases which shall be outlined in the next section.

Also shifting the more general sense of COVID-19 impacting all travellers, it has also impacted the decision making of travellers in the short to medium term affecting which destinations to go to (Matiza, 2020). For example, if an area is less affected by COVID-19, more people will consider visiting that destination over others (Matiza, 2020). Also by extension, some areas which have suffered the most from the pandemic may impact the destinations suitability to travel all together. Extending this post-pandemic, health safety has now become a bigger factor in deciding destination. However with business travellers in particular, changing destinations cannot be avoided, as the economic impact is a major concern for these travellers.

Hence for MediTravel, the use-cases of the application and what has been developed so far has to be put into somewhat developing awareness and clear information to varying degrees. To widen the business scope of the application, the use-cases will have to be flexible and likely managed by the user.

User Use Cases

Breaking down the potential user needs and desires, and understanding that sub-groups of Travellers may use the application differently, we have broken this down into two tables. The first one assumes the following main categories of travellers as previously mentioned, and the second one puts into perspective sub-categories to recognise the variable needs of users.

Table 2. Categorisation of MediTravel Use Cases with Major Traveller Groups

Type of Traveller	Use Cases
Casual	<ul style="list-style-type: none">- Find out information about destinations to assist with planning- Provide a platform to support them during their travel if they get sick- If they get sick, seek out treatment options available.
Frequent	<ul style="list-style-type: none">- Find out information about destinations to assist with planning- If they get sick, seek out treatment options available.- Find out possible places to seek treatment- Get live alerts about potential health risk arising at their destination
Business	<ul style="list-style-type: none">- Find out information about destinations to assist with planning- If they get sick, seek out treatment options available.- Get live alerts about potential health risks arising at their destination- Seek out health regulations impacting travel to their destination

Table 3. Sub-categorisation of Use Cases with Major Traveller Groups

Type of Traveller	Use Cases
Frequent Business Traveller	<ul style="list-style-type: none">- Find out possible places to seek and book treatment abroad
NGO Business Traveller	<ul style="list-style-type: none">- Find out further details of local outbreaks if it impacts their work- Breakdown of affected regions within a country

To justify the above about the potential use cases, assumptions were made about how their work or intention to travel may be impacted by their health. Particularly about frequent and business travellers, a lot of their needs are quite similar as the impact on their purpose to travel is greater than a casual traveller when their health is affected. However the distinction is really made if we get into the specifics of the intent of business travellers. Although these potential use-cases among a general traveller base are less likely to occur, it provides the greater scope of what MediTravel can be sold as. To maintain this flexibility to user needs, the requirements need to encapsulate most user needs and allow for expansion.

User stories

Below are user stories which will inform our potential features, focusing on the key needs and desires of both users and integrating services built in Phase 1 to match those needs.

User Story 1

As a user,
I want to register an account,
so that I can use the application and store my data.

User Story 2

As a user,
I want to know in advance about the disease at my destination,
so that I can protect myself.

User Story 3

As a user,
I want to know all about the occurrence of a disease in a particular location by search,
so that I can make reference to them to find what I need.

User Story 4

As a user,
I want my search history to be recorded,
so that I can check it when I want later.

User Story 5

As a user,
I want to see specific reports and articles pertaining to the disease in a location,
so that I can read more about it.

User Story 6

As a user,
I want to hear about the local news in the area I am visiting,
so that I am caught up on the latest news about relevant diseases.

User Story 6

As a user,
I want a simple way of seeing what diseases are prevalent at a location on a map.

User Story 8

As a user,
I want to upgrade my account,
so that I can access more features

Feature Requirements

Phase 1 Requirements

These base requirements encapsulate what was required in Phase 1 and is to be integrated and interpreted for MediTravel, our proposal for the possible expansion of these requirements in Phase 2.

Table 4. Base Requirements

Requirement	Description
Search	Search for information about a disease by time, keyword and location.
Search History	Record the parameters of each search.
Frequently Searched Key	Show most searched disease names.
Login System	Register, log in, log out to access products and for recording search history.
Disease Data Scraper	Scraping information about the disease from the web

Phase 2 Requirements for MediTravel

These are additional requirements we have ideated to expand on Phase 2, based on our user research and assumptions we have made about to implement our product, MediTravel. However, considering the time constraints, we have differentiated our additional requirements into two categories: 'Must Have' and 'Optional'. The 'Must Have' is a requirement which must be developed to meet all general user needs, and the 'Optional' requirements are for those that meet specialised needs for some users, and may be implemented for the MVP.

Table 5. Updated Requirements for Phase 2 for MediTravel

Requirement	Priority Level	Description
Dashboard	Must Have	Get the most recent tweets

		about local diseases from the current location. By selecting a location on the map, travel advice on that location will be reported, including (travel restrictions, quarantine, vaccines and medication).
Map	Must Have	A map that will be displayed on the dashboard and can be dragged. Allows for another way to search for information.
Subscription	Optional	Enables users to subscribe to the product to access additional features
Notification Service	Optional	Deliver notifications about local health threats to users.

Conclusion

Analysing our potential users and their behaviours during the pandemic, extrapolating the changes in travellers mindsets, and looking into the current needs and wants of travellers, MediTravel is an option which meets the criteria for providing a platform where information about outbreaks can be on a data dashboard, to help support a traveller with any health related issues. As for our sub-categorised travellers, it can also be used as a special research platform to find further information about outbreaks in their specific area which may affect their area of work.

The state of travel after the pandemic, has created a new need for travellers to be alerted about local outbreaks.

References

Matiza, T., 2020. Post-COVID-19 crisis travel behaviour: towards mitigating the effects of perceived risk. *Journal of Tourism Futures*, [online] 8(1), pp.99-108. Available at: <<https://www.emerald.com/insight/content/doi/10.1108/JTF-04-2020-0063/full/pdf?title=post-covid-19-crisis-travel-behaviour-towards-mitigating-the-effects-of-perceived-risk>> [Accessed 27 April 2022].

Morar, C., Tiba, A., Basarin, B., Vujičić, M., Valjarević, A., Niemets, L., Gessert, A., Jovanovic, T., Drugas, M., Grama, V., Stupariu, M., Stoica, A. and Lukić, T., 2021. Predictors of Changes in Travel Behavior during the COVID-19 Pandemic: The Role of Tourists' Personalities. *International Journal of Environmental Research and Public Health*, [online] 18(21), p.11169. Available at: <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8583456/>> [Accessed 27 April 2022].