Feasibility Study

for

Pandemic Tracker

Version 1.1 approved

Prepared by Máté Hekfusz

New York University Abu Dhabi

05 May 2020

1. Technical Feasibility

1.1. Familiarity with the business application area

The business area is information aggregation and awareness-raising about a global issue. The team members have basic knowledge about the issue (the COVID-19 pandemic) and are well-versed in the sources of information that need to be aggregated.

1.2. Familiarity with technology

The technical tools the team is planning to use are:

- Amazon Web Services (AWS) to host the platform
- Web languages (HTML, CSS, and JavaScript) to create the frontend
- Python with a few key libraries (Pandas, BeautifulSoup) to construct the backend
- (Potentially) database management languages such as SQL to manage the internal database
- Third-party APIs and services to acquire the data from

One team member has experience with hosting on AWS, while another is proficient with database systems. All the developers are comfortable with Python, including the libraries, and have varying levels of experience with web languages. The team is largely unfamiliar with the third-party services.

1.3. Project size

The team consists of 4 members, all NYUAD undergraduate students. The project timeline is one month: from the start of planning to the deployment.

Pandemic Tracker has three main functions (outlined in the Software Requirements Specifications) and relies extensively on existing third-party data—the bulk of the challenge will be parsing that data and building a user interface to present it.

1.4. Conclusion

The risk at this stage appears to be moderate. The main risk factors are the limited time available for the whole development process and the variety of tools needed for successful completion. There is some dependence on factors outside the team's control, namely the availability and usability of third-party services to provide information.

2. Economic Feasibility

2.1. Cost/Benefit Calculations

Costs	Period 1	Period 2	Period 3	Period 4	Total
Hosting	0	0	150	150	300
API access	0	0	50	50	100
Support & maintenance	0	50	100	100	250
Total Costs	0	50	300	300	650
Benefits					
Grants & Funding	0	0	1000	1000	2000
Total Benefits	0	0	1000	1000	2000
NCF	0	(50)	700	700	1350
CNCF	0	(50)	650	1350	2700

- Numbers are in AED
- NCF: Net Cash Flow
- CNCF: Cumulative Net Cash Flow
- One period corresponds to six months

The return on investment (ROI):

ROI = (Total Benefits – Total Costs)/Total Costs

= (2000 – 650) / 650 = 1350/650 = 2.07%

The break -even point (BEP):

BEP = (period NCF – period CNCF) / period NCF

= (700 – 650) / 650 = 0.07 = 7%

0.07 * 6 * 30 = 12.6 -> 13 days

So this project will have an estimated break-even point at 12 months and 13 days.

Conclusion:

The ROI is acceptable since the project costs are low. The BEP is highly variable and the estimate deals with a year's wait without funding, which is the worst case scenario—but even then, again because operating costs are not prohibitive, it is reasonable. Overall, the economic risk is low.

2.2. Costs

2.2.1. Development Costs

The languages and libraries the team plans to use to create Pandemic Tracker are all free to use. Amazon offers a 12-month 'AWS Free Tier' which can be utilized to set up the platform free of charge initially. The main third-party services involved (Johns Hopkins and WHO APIs, information websites) allow their data to be used freely, though copyright charges may arise from others depending on which ones are implemented.

Overall, development costs are expected to be minimal to none.

2.2.2. Operating Costs

The only operating cost is AWS, the price of which changes depending on usage and demand. Exact values cannot be calculated until deployment, though they are expected to be manageable.

2.3. Benefits

2.3.1. Tangible Benefits

Since financial costs are estimated to be very low, the project can break even and start making a profit even on small revenues. Since development costs can even be zero, it is possible for the break-even point to be immediate. There are several options for financing long-term operation of the platform: grants from educational institutions and governments who want to utilize the platform to inform their populace are the main options.

As outlined in the System Request document, a global pandemic causes untold economic damage, part of which could be mitigated by keeping people calm and informed on latest developments. This is the goal of Pandemic Tracker, which can then reduce economic strain on countries and, more specifically, save governments money on quarantines by helping people avoid infection.

2.3.2. Intangible Benefits

An informed and calm populace is imperative to defeating pandemics. Pandemic Tracker can help avoid panic, increase morale, and equip people with the knowledge they need to make the right decisions.

In addition, a unified aggregator like Pandemic Tracker is easier to use and more comfortable than having to rely on several different services to get comprehensive information.