## Maintenance Plan

For the next year, maintaining our gTrade product will cost about $42,931. This final annual cost for maintaining the product for a year adds up from the cost of hiring the developers to maintain the product, the cost associated with keeping the product live on the virtual machine, along with the cost of subscription to the API's that are used to make the product work.

The cost of hiring a developer in 2019 is anywhere from $50 to $100 per hour when working with an app that functions on a database and uses API's according to ThinkMobiles.com. Because our app is a simpler version of this type, and only operates with a few databases, the cost of hiring a developer should be on the lower end at $50 an hour. This developer would be responsible for making sure that the app continues to function properly, that the bugs that are found along the way and that are in our bug list are fixed, and that the API keys continue to work. If this developer finds that any of these things is no longer functional, they should work to fix them quickly and make sure that their fixes are sustainable. Also, as we continue to get customer feedback on the look of the website, and the functionality of the website, the maintenance developer would continue to receive updates on what parts of the application need to be fixed and which parts of the applications need to be updated in terms of the looks. Because the developer may or may not have items to work on during the lifetime of the product, the maintenance developer will not be needed for a full 40 hours a week and every week during the year. The developer will have more to do at the beginning of the year, and as

time progresses, they will have less to do as they fix more and more of the issues. Because of this, the developer will most likely start off working 40 hours a week and as the product becomes more refined, they will only be needed for about 10 hours a week. The best estimate for how long this transition would take is about two months. After about two months of the maintenance developer working on the product, they would be able to transition to doing less intensive work, and the job would be more of a part time operation than a full-time one. For the developer to work for $50 per hour for the first two months would cost a total of $16,000, and for the developer to work for the next 10 months, it would cost $20,000. So, the total cost for the maintenance developer to work over the course of the entire year would be about $36,000. If the budget was not available for this kind of cost, the executive team could consider having the developer work less, or do the maintenance themselves.

The cost of keeping a professional website running on Heroku servers can cost anywhere between $25 to $100 per month. Because our website is not memory intensive, the cost of this subscription would most likely be around $50 per month. The app that we built does not rely on storing any sort of data in order for it to be functional. In the future, we would like to add the ability to make an account for the user to log in to the website. With this account, the user could specify stocks that they are interested in following, or get email notifications that alert the user that a stock in their interest is currently trending. These features have not yet been implemented, but they would provide the customer with more of an incentive to use the product and keep them interested with the updates. These additions also would be very lightweight to add in

terms of memory and functionality. The information stored for each user would add more information for us to store in the Heroku servers. This factor, along with the traffic to our Heroku app, mean that the more that people use our website, the more that our subscription would cost. The cost of $50 dollars per month over a full year adds up to $600 for a full year of hosting our website on Heroku. This is a reasonable cost, but there are other factors to consider as well. Since we will be hiring a maintenance developer for the full first year of the product, the possibilities of other sites to host our app should be considered. For example, Amazon Web Services offers a similar service for a lower price. The catch, however, is that the user must know more about hosting a website on a virtual device, and be more skilled in this area. So, the price of hosting the website could shrink if we were able to recruit a good developer to work on maintenance. For now, we can assume that the cost of hosting the website will continue to be $50 a month.

The next cost associated with the maintenance of our product is a subscription to each of the different API's that are used to make the website work. The API's that are used within the website include the News API, the Google Trends API, and the IBM Watson Natural Language Processing API. These three API's are used together to determine if a given company's stock is trending. First, the Google Trends API is used to figure out if the company's stock is trending at all. Then, if the company is trending, the company name is used with the News API to find related articles to the company at the current time. The article links are collected from the news API and each one is individually passed to the Natural Language Processing API from IBM Watson. The

Natural Language Processing API receives the link to the article, parses through the text of the article and gives it a score on a sentiment scale from -1 to 1. The Google Trends api from NPM is available for no cost, and therefore does not need to be considered in the maintenance costs. The Google News API comes in at $449 per month for commercial use. This means that a full year of using the Google News API would be $5,388. The Natural Language Processing API from IBM-Watson is the last piece of the software. The API is free for 50,000 uses per month, but any more uses and the API can vary in price. For our purpose, gTrade would subscribe to the “Pay as you grow” service, which charges at $100 per 100,000 API calls. This would mean that the service would most likely add up to $60 per month. Over the course of one year, this adds up to $720. Adding all of the API costs together, gTrade would need to spend $6,108 over the course of the year.

The final cost with maintaining the product is the cost associated with keeping the app on the different platforms that it will be sold on. This includes the Google Play Store, the Apple app store, and the Microsoft Store. The Google Play store has a one time registration fee of $25 and has no annual charges. Housing our app on the Google Play Store will earn us a 70% revenue share with 30% going to Google. To register as a developer for the Apple app store, it takes a $99 annual fee. Apple gives its developers a revenue share of 70% for their apps. The Microsoft App Store fees are similar to the Apple App Store. Microsoft offers a $19 initial fee and $49 fee for individual developers, but for companies, the initial fee is $99 and also $99 annually. To add up the expenses for putting our apps on the three stores, we get a total of $223. The 30% revenue that

we will have to share may not be ideal, but it is worth it to have our app available everywhere for users.

The costs going from hiring a developer all the way to getting the app on the different platforms adds up to a total of $42,931. This number is an estimate and can be changed depending on how willing the team is to continue working on the product, and also factor in the budget of the maintenance. Things like the host of the website can be changed in order to reduce the overall cost of maintenance.

**Sources**:


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