Solar System Simulator—Deployment Plan

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Our product, which is called the Solar System Simulator (SSS for short), simulates the solar system; furthermore, it lets users add different planets to the solar system, showing how that’ll impact the existing solar system and how everything will interact with the new planet. Lastly, our product also will play music whenever a planet is either interacted with or added. The inspiration for the project is Google Earth, and the developers collective love for mathematics, planets, and the challenges that come along with it. To make this product a reality, we must go through several obstacles. We have to figure out how the product will be made, where the product can be interacted with, how to market the product and how will it reach the users, and what to do with the product once established.

To knock out the how part of the project, the team is using HTML and the libraries that come alongside it to create the solar system. The images we got are from the same website, that website being [www.solarsystemscope.com.](http://www.solarsystemscope.com.) This website has realistic textures of each of the planets in the solar system and they are free to use as well. Not only that, having the textures makes it easier to differentiate all the planets and eases our workload as we do not have to make the textures ourselves. Furthermore, the libraries and the capabilities of HTML makes it simpler to create a realistic solar system from scratch. The text editor the developers use is Brackets. It is not only a text editor, but it is also a means to test the program. Brackets has this ability to create a local server when going to go test the code, which is needed to get the test going, otherwise there isn’t a way to even compile the program. We have a team of coders working diligently on the project voluntarily on their own time, collectively working together to implement all the features of the product. There are 6 members on the current team, with the hope to grow. Currently, different members are assigned different tasks; however, everyone collectively comes up with different solutions and implementations. Because of this, time management is an issue for the developers as they try to always work on the project together. However, aside from food expenses taken up by each developer, the product became a reality based on sheer voluntary hours and the possibility of it being a big thing in the future.

Now that we have a functioning product, the only problem is that the only way to run the program at the moment is Brackets. An average consumer is not going to have Brackets on their laptop, computer, or mobile phone, thus, the developers have to figure out a way the Solar System Simulator can be accessed by anyone with internet and a computer. The first step to this is to purchase a domain. The domain makes it to where we can have our own website, that can be accessed extremely easily via web. We ended up going to digitalocean.com to get a server, and the served costs $5 per month. It’s already been two months, so the total right now is $10 total for the server. We plan on keeping the server for one more month for sure, and then we will all decide if we want to continue paying for it; however, right now the total is $15.

Now that we have a server, we need a place to access all this information. To access all this information, we are buying a domain for Google Domains. The domain name we are going with is 448planets.com to honor our favorite professor and our favorite class, which being EECS 448 and Professor Gibbons. The domain costs $12 a year, so the domain name will be under our control till at least December. We have not decided if we want to renew it once it expires, it all depends on how our future plans end up going. Because of this, the cost of the domain will stay $12. Look at figure 1 below to see how the server and domain contribute to the total cost of the product when it comes to the development.

Now that our product is fully developed, we now need to get consumers to use our product and test it further for us. To achieve this feat, we first are going to present in front of our whole EECS 448 class. This will be a good start on a local level to spread the word about our product. Not only that, we all are going to make social media posts, tell our friends and family, hand out pamphlets, and try to demo our product to different professors we know. We are doing this in hopes to get feedback on what others think of our product and how it can be improved further. The cost for this type of marketing is nonexistence when it comes to money, but it does cost a lot of time and effort.

While the local marketing is only to help test the product, the global marketing is where the money will come in. Our main goat is getting the attention of Google Earth, as SSS was inspired by it and it takes that concept on a bigger scale. Not only that, with more resources and time, SSS can be integrated into Google Earth as well as it can now be Google Solar System. Google Solar System does not exist at the moment and our product will give them a base to work with. Because of this, we are going to invest in some ads of our own. Businesses usually spend about $9,000 to $10,000 monthly on Google Ads. We are not that rich, and neither is our company that big. We are seeking just enough traction to get some attention and then are hoping for the snowball effect. Because of this, we are going to invest $1,000 in Google Ads to gain traction within the company and get some attention. Furthermore, to gain even more traction, we are going to invest in Facebook ads. Knowing all the controversy around Facebook when it comes to ads, we understand that their users are very susceptible to ads and they are more than likely going to interact with it. Not only that, Facebook also owns Instagram, which means our product is going to get traction on two different, major social media platforms. Not just social media platforms, these platforms get really high click count when it comes to ads, ensuring we are going to get some clicks and attention. On average small companies spend around $1,000 to $2,000 per month for ads on Facebook, which is exactly what we are going to spend as well. About $1,000 for one month on Facebook can go a long way. Figure 1 and 2 breaks down the total cost of deployment and how each thing contributes to the total.

The ads are just there to gain traction, the main goal for us to get the attention of Google Earth. Once we get that, we want to present to them our product in the hopes of being hired and SSS being integrated into Google Earth, or it being the base for Google Solar System. University of Kansas already has good and deep ties with Google Earth, and we will take advantage of that. Using all the data and feedback we got while marketing locally, we continue to improve and expand upon our project till we end up on Google Earth’s radar. Once we get a meeting or someone hears us out, we are preparing our pitch and are ready for whatever anyone throws at us.

We knew going into this we wanted our product to go to Google Earth, but if that fails the product isn’t sustainable by itself, so we would still want to be bought out by any company looking to invest in a solar system simulator. The market is fairly open on this one when it comes to big companies, and while there are other simulators out there online, ours has some features that are not present online. One of those major features is being able to add other planets to the simulation, and the simulation playing music as well. That’s the selling point of the base of the project, and with more time and funding the possibilities are endless on what can be done with the simulation. Not only that, the code is mathematically accurate as well because a lot of astrophysics went into make the product, meaning the distance, the size, the orbits, etc. are not hard coded.

**Figure 2**

**Figure 1**

At the end, the total cost of deployment ends up being around $2,027 because of the server, domain, and marketing. The majoirty of the cost ends up coming from marketing (see figure 2) because the product isn’t sellable by itself and it is not self-sustainable. The Solar System Simulator has to be bought by a bigger company and consumed because no is going to pay like a subcription or a fee just to use a simulator, and we are going to continue to lose money. Furthermore, to gain enough traction and attention, marketting is extremely necessary because we have to catch the eyes of investors and other companies who maybe intrested in buying out the product and maybe even expanding upon it. We chose Google Ads and Facebook to market is because we want to get Google Earths’ attention and Facebook is an effective way to get clicks onto our website. We had to attain our own server and domain because that is the easiest way to get consumers to interat with our product. It can be now accessed on the phone and on a computer. Right now the spending on the product is very short term and very limited because our hope is to get bought out or consumed quickly. If it comes down to it, our team is prepared to discuss what to do in the future and how we should proceed onwards.