**Cost-Benefit Analysis**

**Costs**

Costs are associated with the following areas:

1. Development
   1. Costs included in developing the project. $15/h per team member.
2. Implementation
   1. Costs include implementing the system, hosting the application on a server and marketing. Marketing assumes an average of 4 hours each day at $15/hr
   2. Typical app store fee of $99 is included.
3. Upkeep
   1. Costs include maintenance and updates of the service; $15/hr per team member working on maintenance and/or updates at an average of 1 hour per day.
   2. Marketing at an average of 4 hours each day at $15/hr (this is combined with the marketing of implementation for Year 0 for a total of 8 hours a day to create initial customers).
   3. Server fees and app store fees. Approximately $30 a month for server and $99 a year for app store.

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| --- | --- | --- | --- | --- |
| Cost Area | Year 0 ($) | Year 1 ($) | Year 2 ($) | Total ($) |
| Development | 6,000\* | 0 | 0 | 6,000 |
| Implementation | 21,999 | 0 | 0 | 21,999 |
| Upkeep | 27,736\*\* | 27,835 | 27,835 | 83,406 |

\*Figure calculated from $15/h for 4 team members working 100 hours each.\*\*value assumes server cost for full year, therefore cost will be lower in actuality; it is kept in but redundant app store fee was removed.

**Revenue**

Revenue is generated from in-app advertisements, as well as purchases of the application at $1 per download. Year 0 assumes 100,000 downloads and the following years are extrapolated from this value and include advertising revenue. Numbers increase as popularity grows and are based on an estimate of the number of *total* downloads doubling each year due to expansion and marketing; therefore, Year 1 has the same revenue as Year 0 because the count of *new* downloads is the same as Year 0 (200,000 - 100,000 = 100,000), while Year 2 is higher due to the doubling of the last year’s count (400,000 - 200,000; therefore, a total of 400,000 total downloads reflected overall with 200,000 new downloads for Year 2). Advertising revenue is calculated by numerous variables. Average daily user sessions is set to a value of 5,000 (as is the average value according to PlacePlay); because these figures cannot be calculated appropriately before implementation, to keep the revenue reasonable, a value of 5000 will be used *each* year rather than starting lower and increasing the amount. Average minute per session is approximately 2 minutes and advertising impressions per minute is a value of 2 as well. Advertisement network fill rate is 80% and eCPM is $2 (all values are also averages from PlacePlay).

|  |  |  |  |
| --- | --- | --- | --- |
| Year 0 ($) | Year 1 ($) | Year 2 ($) | Total ($) |
| 111,680 | 111,680 | 211,680 | 435,040 |

**Return on Investment**

The total cost after Year 2 will be $111,405 and the total revenue after Year 2 will be $435,040; a net profit of $323,635 will be made. As the previous table shows, the revenue steadily increases over the years, while the cost table shows a steady cost of upkeep *alone* (with the exception of Year 0).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Year 0 ($)** | **Year 1 ($)** | **Year 2 ($)** | **NPV ($)** |
| **Cost** | 55,735 | 27,835 | 27,835 | 111,405 |
| **Revenue** | 111,680 | 111,680 | 211,680 | 435,040 |
| **Net Return** | 55,945 | 83,845 | 183,845 | 323,635 |