**Risk Management Plan**

**Revision History**

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| **Version** | **Date** | **Description** | **Author** |
| Inception Draft | Sep 20, 2018 | First Draft. To be refined during elaboration. | Eric Guzman,  Mike Peralta, Alessandro Quezada |
| Elaboration revise | Oct 30 , 2018 | Revised nothing new to add | Eric Guzman |
| Elaboration 2 revise | Dec 11,2018 | Changed the mitigation to risk number 1,3 and 6; added a new risk | Eric Guzman |

**Risk Registry**

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| **Risk Number** | **Risk Name** | **Description** | **Weight** | **Category** | **Mitigation** |
| 1 | Credit and Debit Authorization Service Unavailable | If the paypal authorization service is unavailable then no transactions can be completed which can result in $15,000 a day in lost revenue. | HIGH | Business | 1. Incorporate redundant authorization serves from independent venders transparent to the rest of the system.  2.Maintain multiple implementations of credit card processing, so that if monitoring reveals one goes down, we can simply switch to another. |
| 2 | PayPal Authorization Service Unavailable | If the paypal authorization service is unavailable then no transactions can be completed which can result in $10,000 a day in lost revenue. | HIGH | Business | 1. Incorporate redundant authorization serves from independent venders transparent to the rest of the system.  2. Implement in house service keeps all the purchases and allows user to still get purchase and then later authorize the purchase. |
| 3 | Anti hacking algorithm unavailable | If the HAACS goes down or is broken this can lead to the scoreboard displaying unreal scores. This can lead to players lost of interest in beating the score which can result in $3000 a day in advertisements revenue lost. | MED | Business/  Technical | Running test on the HAACS System needs to be done in the maintenance to make sure the algorithm is working correctly.  Have human admins review HAACS reports before finalizing any bans or judgments. |
| 4 | Unexpected bug that causes failure to any party of the game | Any bug that can happen and players will be able to report and we will fix the problem on the next bi-weekly system maintenance. | LOW | Technical | Any reports from users will be evaluated and running test on parts of the system in maintenance to make sure the system is working great |
| 5 | Having to run maintenance and put system down. | Running Maintenance keeps us offline for 4 hours on Thursdays from 1 AM PST to 5 AM PST. PLayers will not be able to play in the system because of this. This affects sales and fro each hour down we lose around $350 an hour. | LOW | Technical | This day and times are perfect for the majority of users in the western hemisphere but are bad for the users across the world. WE can chose a better times or minimize the time the system is under maintenance. |
| 6 | Game Server Failure | If the servers responsible for keeping players connected to the game (ie: Authentication, Game Play, Chats, etc) go down, we will lose our ability to generate revenue. We will immediately lose revenue equal to the revenue we normally make during any typical timespan when the servers go down.  We will lose additional revenue in the form of user dissatisfaction and loss of reputation, which results in less users playing and spending.  The risk lowers as these service disruptions become shorter and less frequent. | MED | Technical | Mitigation is to instead have local game clients store all gameplay information, then upload to the servers later, when the server becomes available again. Implementing this will bring the risk to Low  The more we are able to implement this idea (more physical locations, more decentralization, redundancy, etc), the more we can mitigate this risk until the risk becomes completely negligible. |
| 7 | Database Failure / Data Loss | If we should lose our database or its data, the majority of our user base would become dissatisfied with our system, with reactions ranging from annoyance to infuriation. Players would also lose any previously purchased PowerUps or credits, and we would be responsible for massive refunds.  Massive revenue loss resulting from user dissatisfaction, coupled with massive refunds, could cripple or end our ability to continue doing business. | HIGH | Technical | We should utilize a database solution that is highly resistant to data loss, such as database clusters with redundancy or other related technologies.  We should also make backups extremely frequently. Full backups every 24 hours, and differentials every 1 hour, at minimum, would be wise.  We should also keep several copies of our data onsite, in addition to several copies off site, if possible. Physical copies should be physically transported offsite every day, and rotated on a regular schedule. |
| 8 | PLayer Lost of Interest | The Player loses interest in the game due to the player being bored with the features and would want moree. | High | Business | In the future we will be adding new game modes and new items so the Player can stay interested which lowers our risk from High to Med |