



Game Design Document ver. 1.4.5

Brick Witch: The Magical Brick Breaking Game

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Design Document History

This is a living design document meaning that it will be edited and changed to reflect design changes made throughout the production of the game.

DOC VER	DATE	NOTES
1.0.0	08/28/2013	Version 1.0, previously referred to as Game Design Specification 1, outlined the power ups, Balls, Blocks and Paddles for this game. Appendix A is the primary content of this version.
1.1.0	09/06/2013	Version 1.1 includes new sections: Level progression (color coded), game design examples, audio information, monetization, sound design, user flow and art design.
1.2.0	09/10/2013	Version 1.2 includes new sections (Appendixes B, C and D, Additional Color Concepts) and responses to DeNA's questions (Appendix E).
1.2.1	09/11/2013	Added Bumper Block to Level Progression (Level 34).
1.2.2	09/12/2013	Further clarified the use of in-app currency and implementation of notifications (Appendix E) and revised the story. Removed duplicate Paddle from Appendix A (Rails was listed twice).
1.2.3	09/16/2013	Put in new Story (See "The Story" section) and Story Scenes and Dialog (Appendix E).
1.2.4	09/19/2013	Minor text edits.
1.2.5	09/20/2013	Added the Milestones & General Workflow (Appendix F) calendar.
1.3.0	09/23/2013	Added: Rank System , Star clarification , Points section , "Options" as implied "Pause," Timer clarification and when to display the Level Objectives as well as other small clarifications. Also updated the Game Title Ideas . Changed "Possible Game Modes" to "Game Modes" .
1.3.1	09/23/2013	Corrected "Map" instead of "Main Menu" for displaying the Witch's Rank.
1.3.2	09/24/2013	Changed the name to "Brick Witch" throughout the document. Clarified Level 15/16 Door pass-through. Point Chart added to the Scoring – Points section. Changed consecutive Room designations to (A) and (B).
1.3.3	09/25/2013	Updated Multi-Ball description (expels 6 Balls). Clarified Ipswitch role in the game in the Story section. Moved unused sections of the old GDD to Appendix G: Future Features & Ideas .
1.3.4	09/26/2013	Small formatting, Index adjustment and text changes (for clarification and style consistency purposes).
1.3.5	09/27/2013	Added Extra Life Spell IAP and clarified the Full Life Pack IAP, both in the Monetization section. Added Life System .
1.3.6	09/30/2013	Moved Cauldron Block to the appropriate Block type (Bomb Block / Explosive Block).
1.3.7	09/30/2013	Added Appendix H: Tutorial Dialog .
1.3.8	10/03/2013	Fixed Appendix order references.
1.3.9	10/04/2013	Replaced Flow Chart .
1.4.0	10/10/2013	Made the following changes: <ul style="list-style-type: none"> • Changed the Rank from Star-based system to Stage-based/Floor-based system. • Moved Portal Power-Up from main doc to Future Featured & Ideas Appendix. • Removed Multi-Ball from Gifting. • Added Grandma Gift (Shield/Net Power-Up) as Rank Gift.
1.4.1	10/14/13	Moved the following from main GDD to Future Concepts appendix (Witch Rank, Grandma Gift and Web Shield as Giftable item).
1.4.2	10/17/13	Small clarification to the Points section (removed duplicate line). Removed legacy Wad mention from the Game Overview section.
1.4.3	11/14/13	Updated the Story , Level Progression and Dialog to include content for the first Update (adding Stages 11 and 12, i.e. 30 new levels). Also updated the Level

		Objective Text Chart to reflect the new Levels.
1.4.4	11/20/2013	Made changes to Level Progression to reflect actual Levels being used in RC.
1.4.5	11/26/2013	Adjusted the Tutorial Text Appendix to reflect actual brick and power-up introductions.

Game Overview

Philosophy

Our goal is to create a Block breaking game (a.k.a. a brick breaker) that includes exciting gameplay as well as a story, theme and art style that appeals to many types of players. It will include:

- Different types of Blocks that vary in size, appearance and destruction.
- A lot of exciting particle effects (especially chain reactions).
- Levels that can be completed in a short period of time (30 seconds or less).
- Different mission types based on a combination of time, target Blocks and number of Balls.
- A Life System where it costs a “Life” to re-play Levels (after losing a Level).
- Lives that regenerate over time or are gifted by Friends.
- Power-Ups, Balls and Paddle attributes that can be earned in-game, gifted by Friends and/or purchased (as IAPs).
- A theme that includes both mini-goals and Level Bosses yet the game and story can both expand so as to allow unlimited updates.
- A map that represents Level progression.

Common Questions

What is the game?

The game is based on well-defined genre of Block breaking (a.k.a. brick breaker, Breakout, etc.). The differentiating points include a Level progression that is based on moving the main character on a game map, social media tie-ins, a well-crafted/presented story and in-app purchases.

Why create this game?

Candy Crush has demonstrated adding the aforementioned characteristics can revitalize an old game mechanic. Therefore, we believe we can rejuvenate the category and introduce Block breaking to a completely new audience that has yet to see this gameplay as well as appeal to existing Block breaking fans.

Where does the game take place?

The game takes place in and around a haunted mansion inhabited by monsters.

What do I control?

You control the Paddle and some of the Power-Ups.

How many characters do I control?

You “control” a young adult female witch character, Trixie.

What is the main focus?

The main focus of the game is to break lots of Blocks and achieve the Level Objectives. This allows the player to advance over the game board, reveal story elements and unlock exciting new content.

What's unique?

There are many Block breaking games. As of now, few if any have incorporated a strong story element, interesting characters or social media integration.

What system(s) will this game be available for?

Brick Witch will launch for the following game systems:

- iOS 6 and above (iPad, iPhone, iPod Touch)
- Android supporting Android 2.3/API 10 and above.

Brick Witch will comply with the established guidelines and requirements for the appropriate app store(s):

- iTunes (iOS)
- Google Play (Android)
- Amazon (Android)

Other technical attributes of the game are available in the ["Technical Specifications"](#) section as well as [Appendixes B, C and D](#).

Technical Specifications

Most of the game's technical specifications are addressed in the Appendixes at the end of this document:

- [Appendix B: Outline of Server Architecture Responses](#)
- [Appendix C: Security Measures – Fraud Detection & Prevention](#)
- [Appendix D: API Architecture](#)
- [Appendix E: DeNA App Development Guidelines & Additional Technical Specifications](#)

Feature Set

General Features

- Expansive Game Area
- 2D Block Breaker Graphics – gorgeous hand-drawn art with full Retina support.
- Engaging Storyline
- Social Media Tie-Ins
- IAPs for Monetization

Multiplayer Features

There are no multiplayer options.

There are tie-ins to social media including unlocking content through “asking friends” for help, visual representations of Mobage and Facebook Friends on the game Map, sending Power-Ups to Friends and posting critical accomplishments to Facebook. Users are also encouraged to tweet about their progress via Twitter.

Level Editor

We have built and continue to develop a Level Editor to speed up the production process.

This simple-to-use tool could eventually be put into the hands of the game community to allow them to generate and share content.

Gameplay

We intend the gameplay to be similar to the best-of-breed Block breaking games. The game should have the following critical components:

- Very simple to pick up and play – anyone can play it.
- An engaging story – the gamer desires to see how the story unfolds.
- Simplicity through approximately 60 Levels – It’s relaxed, fun and easy.
- Exciting visuals. Gamers can make enormous explosions easily.
- Music and sound set the tone. Fun and creepy but cute.
- Difficulty scales up beginning at Level 45 – encourages users to play and spend.
- Power-Ups are diverse, effective and visually interesting.
- Easy, intuitive touch-based controls.

The Game World

Overview

The game is set in and around a haunted mansion that is occupied by cute and friendly Monsters.

World Stages

The world will be divided into Stages with each Stage consisting of 15 Levels. A pair of Stages will take place in the same "Room" but with a different view.

See the [Story section](#) and [Game Flow / Level Progression](#) section for Stage details.

The Physical World

Overview

The game play takes place in a room that consists of the Player's Paddle, a themed background, a themed border and Blocks. The Story and Stages are set in key locations.

Key Locations

Key locations of the haunted mansion will include:

- Wine Cellar (Stage 1)
- Dungeon (Stage 2)
- Laundry Room (Stage 3 and 4)
- Foyer/Lobby (Stages 5 and 6)
- Den (Stages 7 and 8)
- Library (Stage 9)
- Kitchen (Stage 10)

Please see the [Story Scene](#) and [Game Flow / Level Progression](#) sections for more details regarding the Locations.

Travel

The player moves through the world by:

- A. Playing the game and automatically progressing through from a completed Level to the next Level. (The Map will exist but not be shown unless the player backs out and views the Map).
- B. Either, on the World Map, selecting a new Level or selecting a completed Level by tapping on it.

Scale

The Story and Game World can be infinitely scaled so new stages and Story can be added at any time. The new Stages will be represented by adding areas to the World Map.

The World Map will be visualized using the Mansion as the key element. Each stage takes place in a room of the Mansion, with an object being found or a Door being unlocked to the next room as each Stage is completed.

Note that, in many instances, two Stages take place in the same Room. There will still be a “Door” between the Stages.

Objects

There will be various types of Block, Paddles and Board Power-Ups (see Appendix A for details). Additionally, there will be room-specific elements that interact with the Balls and Blocks.

Blocks & Block Power-Ups

Note: Please see the [Scoring - Points](#) section for the Point value for each type of Block.

- **Standard Block** - The Standard Block requires only one Hit by a Ball to be destroyed
- **Bomb Block / Explosive Block** – Bomb Blocks explode, destroying nearby Blocks within a radius ($x * y$).
 - 1 Hit or 2 Hits depending on the Block attribute.
 - **Cauldron Block** - Requires 2 Hits. The first Hit cause it to activate (“Bubble”) and the second Hit causes it to burst upward and take out destructible Blocks in its blast area. It counts as one Hit per Block.
- **Unbreakable Block / Metal Block** – Unbreakable Blocks help shape the game environment and cannot be broken by the player (except by Special Balls).
- **Ghost Blocks** – Ghost Blocks are transparent so the Ball passes through them three (3) times before the Block becomes a full apparition (solid). After a Block becomes solid it can be broken with one Hit.
- **Moving Block** – Moving Blocks move on a defined, cyclical path and can be any Block type. These will likely move at a constant speed.
- **Bumper Block (Bonus Points / Prize Multiplier)** – These are similar to a Bumper on a pinball machine: Each Hit adds points to your Score. You must Hit each in a series to activate a multiplier.
- **Strong / Multi-Hit Block** – The Strong Blocks require multiple Hits (2 to 4) to be destroyed.
- **Chain Blocks** – These Blocks link to surrounding Blocks and ignite the destruction of those Blocks which have been defined as chaining to them.
 - 1 Hit or 2 Hits depending on the Block attribute (e.g. Candle requires 1 Hit).
- **Grand Finale Block / Instant Win Block** – These Blocks require 2-4 strikes to be destroyed and ignite the destruction of all the remaining Blocks on the screen (in a

random sequence).

- **Cross Explosive Block** – These Blocks explode to destroy themselves and a cross (“+”) formation, destroying everything to the left, right, above and below (it clears a row and column).

Paddles & Paddle Power-Ups/Power-Downs

- **Shoot Lasers / Rockets**– This Power-Up allows the user to destroy Blocks by shooting at them. This is accomplished by tapping the screen while the power up is active. This Power-Up lasts for six (6) seconds.
- **Reverse / Inverted Controls**– This is a negative Power-Up (“Power-Down”) that causes the Player to need to move right in order to get the Paddle to move left and vice versa.
- **Resize (Larger/Smaller) Paddle** – These Power-Ups are either good or bad in that picking them up either increases or decreases the size of the Paddle.
- **Electric Shock Paddle** – An electric shock blasts from the Paddle and destroys and entire column of Blocks (lasts for only 1 or 2 uses).
- **Sticky Paddle (Grab-and-Shoot Ball)** – With this Power-Up, the Player’s Paddle automatically grabs the Ball, holds it and allows the user to move the Paddle with the Ball attached to it. Upon lifting the finger - or a single tap on the screen - the Ball shoots either straight up (if it has landed in the middle of the Paddle) or to the right or left at 45 degrees depending upon ball placement.
- **Magnetic Paddle** – This power up will attract all loose objects, including Balls and falling Power-Ups/-Downs, to the Paddle based on a 6x8 grid above the Paddle.

Balls & Ball Power-Ups/Power-Downs

- **Speed Up / Down Ball** – This Power-Up/-Down has an associated + or – value which either increases or decreases the Ball’s speed by that % when the Power-Up/-Down is caught.
- **Time Warp (Ball slows near Paddle)** – This reduces the Ball speed by 50% but the refracted angle is equal to the speed of the original entry path of the Ball.
- **Multi-Ball** – This Power-Up spawns 6 new Balls (in addition to the Player’s active Ball) at random angles and speeds from the player’s Paddle.
- **Acid Ball** – This ball “burns” through any block type in its path. It will not stop destroying until its 6-second time limit expires.
- **Grenade / Exploding Ball** – This ball causes a detonation of a 3x3 area when it strikes any block. All Blocks in the 3x3 area are destroyed no matter their remaining number of hits.

- **Flicker Ball (Disappear/Reappear)** – This power up causes the ball to disappear when it moves two rows higher or lower and reappears two rows after that.
- **Death / Lose-A-Ball** – This Power-Down takes a Ball from the player (it destroys the currently active Ball) when caught by the Paddle.
- **Free Ball** - This Power-Up gives the player one (1) free Ball when caught by the Paddle.

Additional Drops & Board Power-Ups/Power-Downs

- **Shield/"Net" (Can't Drop/Lose Ball)** – This power up causes a barrier to appear below the Paddle such that the player cannot lose their Ball. It lasts for 3 hits (by any Ball(s)). It appears as a spider web across the bottom of the screen.
- **Supernova (Clears Board)** – When the Ball goes Supernova (based on Points) it destroys all the Blocks on the screen in a random order. This is based on Points. This may also be a Block or Ball.
 - This is also a random Drop Item with a very low percentage (1%) of being dropped at any time. The likelihood of it being dropped increased by +1% each time a Player must re-play a Level. (The longer they stay on a Level, the better their chance of getting a Supernova Drop).

Life System

Lives are used to play the Game. Players begin the game with a full inventory of 5 Lives.

A single Life is lost - or considered consumed, i.e., removed from the reservoir of available Lives – when a Player Fails a Level (i.e., does not meet the Level Objective).

Players have a reservoir with a maximum limit of 5 Lives at the beginning of the Game. Lives replenishes at the rate of one (1) Life each 30 minutes until the max Life limit is reached.

Players may claim a Life or Lives that have been gifted to them in any amount but the Life reservoir will not pass the Player's available max limit (5).

For example, a Player has a cap of 5 max Lives. They have 3 Lives available to Play (they consumed 2) and want to claim Lives that have been gifted by Friends. They select and claim three Lives at one time. When the three Lives are redeemed, the Life counter goes up to 5 (not 6). They essentially lost one (1) Life.

Also, a Player has a max cap of 5 Lives and 3 are available to Play. They claim one (1) Life from Friends and leave 5 Gifted Lives unclaimed. Their Life count increases to 4 (+1 claimed Life) and their Gifted, unclaimed Lives count is now 4 (-1 claimed Life).

Rendering System

The game will be rendered using 2D sprites in a 3D environment. This will give us the look we are going for while allowing us to use 3D effects for things like item transformations and particle effects.

The rendering engine is Unity ver. 4.x.

Camera

The camera is orthographic in a fixed perpendicular position above the game Boards.

Game Engine

We will be using the Unity3D game engine (version 4.x) for our implementation of the game. This will allow us to easily deploy the game across multiple platforms while minimizing the amount of native functionality that needs to be ported.

Universal Code

Certain game and engine functions like Localization support, notices, 2D sprite atlasing, and currency tampering prevention will be implemented using internally developed libraries that are used across several indiePub games.

We will also be using Facebook and Mobage libraries for leaderboards, player progress, asking for Keys, gifting power ups and other minor elements.

Backend Code

The backend is a RESTful API written in PHP that handles requests from the app. Requests return JSON to the app.

The Story

Overview

The game takes place in and around a haunted mansion inhabited by seemingly countless cute Monsters. Our heroes – a young witch and her magical cat – break Blocks and various magical items to navigate through stages advance through the game.

The antagonists are Mansion inhabitants - monsters, ghosts, vampires, mummies, etc. – who must be defeated.

Main Story

Trixie is a young adult witch learning about her new magical abilities.

Her mother, Maxine, is a wise witch who sends Trixie and their magical talking cat, Ipswitch, to a Brick Witch so Trixie can learn more spells and perfect her magical skills.

At the Haunted Monster Mansion, Trixie trains by using magical spells – in the form of Balls cast from her wand Paddle – to break various objects and defeat the Mansion’s many inhabitants.

Monsters in the game are more like nuisances and tricksters than truly bad or evil. When they are defeated, they are essentially “knocked out” and not killed. (They can appear later in the game although each Stage will feature one Monster “Boss”).

Stages will usually – but not always - be presented in pairs so that each pair of Stages takes place in the same “Room.” Please note that, even though the Room will be the same, the view in the second Stage will be presented with a different view so the imagery does not become stagnant.

Ipswitch – Power-Ups, Tutorial Segments & Witch Rank Announcements

Ipswitch will act as the game’s narrator, being present whenever an explanation element is displayed. (The exceptions will be the Boss Levels where the Monster will appear instead).

Ipswitch periodically gives Trixie – and the Player – advice during the game. (Note that these moments will take place before or after a Ball is in play so as not to interrupt active gameplay). These will be quick moments where the Cat slides into view and, with one talking bubble, shows the Player how to use a new Power-up/Paddle/Ball or give a suggestion.

As Trixie completes each pair of Stages (or, visually, a Floor on the World Map), she moves up in Rank. While the Player will feel that they are coming closer to becoming an all-powerful Master Witch, the Ranks will be numerically endless so as to accommodate additional Stages. We do need to be careful so that the Player does not feel cheated in not being able to attain a final Rank. (This can be much like the Level system in several other games where a Player’s numerical Rank increases but does not actually affect the character or gameplay).

Presentation Scheme

The story sequences will be shown as still or semi-animated (simple, perhaps looping animations) characters *a la Plants vs. Zombies 2*. A talking character will slide into view over the Game Board, “Talk” through text in a Speech Bubble and slide off screen when the conversation is done. Then the Level will begin.

Each set of conversations will take place after a Stage Door is unlocked and offers a secondary reason for people to want to continue to the next Level/Stage.

Our goal is to keep the conversations short, with 3 to 7 dialog boxes per Story segment.



The repetition of bringing Ipswitch – the cat – on to the screen first establishes him (or her) as the wise cat who offers words of encouragement and advice. This can be important - if we use it to act as an in-game tutorial – as Players will be familiarized with Ipswitch’s appearances.

STORY SCENE - INTRODUCTION

Maxine, Trixie and ‘Switch are in front of the Haunted Monster Mansion. Maxine explains to Trixie that this is where she will begin her Witch’s training. Trixie will need to defeat the various creatures in the house – with ‘Switch’s help – to earn her powers and learn to become the ultimate Witch.

Note: Each Story Segment is shown after a Stage is cleared and the next Door/Gate has been opened. Each will be shown as the characters popping over the game Board with subtle, looping animations and speech bubbles.

STAGE 1: The Wine Cellar

Levels 1 through 15

- In the first 15 levels you must free ghosts trapped in the many bottles and flasks.
- In level 15 your objective is to defeat the Head Ghost.
- The Door between Levels 15 and 16 is not “locked,” i.e., players will pass through it without the need of Keys.

STAGE 2: The Dungeon

Levels 16 through 30

- In levels 15 through 29, free more trapped ghosts.
- In Level 30, you defeat the Gnome by striking 3 mushrooms (Target Mode).

STAGE 3: The Laundry Room (A)

Levels 31 through 45

- In Levels 31 through 44, you breaking soap, Blocks, laundry tubs and such.
- In Level 45 you must defeat the Pink Mummy.

STAGE 4: The Laundry Room (B)

Levels 46 through 60

- Difficulty begins to ramp up beginning with this Stage.
- ~~In Levels 46 through 59, you destroy more soap, Blocks, laundry tubs and such.~~
- In Level 60 you must defeat the Pink Fairy.

STAGE 5: The Foyer (A)

Levels 61 through 75

- In Levels 61 through 74, you must destroy many fire and glass Blocks, as well as Candle Blocks, in various chandelier configurations.
- In Level 75 you must defeat the Head Butler (a Zombie).

STAGE 6: The Foyer (B)

Levels 76 through 90

- In Levels 76 through 89, you must destroy more fire and glass Blocks, as well as Candle Blocks, in various chandelier configurations.
- In Level 90 you must defeat the Creepy Cleaning Lady (a Zombie).

STAGE 7: The Front Den (A)

Levels 90 through 105

- In Levels 90 through 104, you must break various types of textured Blocks.
- In Level 105, you must defeat the Voodoo Witch Doctor.

STAGE 8: The Front Den (B)

Levels 106 through 120

- In Levels 106 through 119, you must break various types of Blocks ~~and Coffins.~~
- In Level 120, you must defeat the Vampire.

STAGE 9: Library

Levels 121 through 135

- In Levels 121 through 134, you must break various types of Blocks ~~including bottles of ink.~~
- In Level 135, you must defeat the Male Sea Creature.

STAGE 10: The Kitchen

Levels 136 through 150

- In Levels 136 through 149, you must break various types of Blocks ~~including bottles of ink.~~
- In Level 150, you must defeat the Chef (creature type YTBG).

STAGE 11: Observatory A

Levels 151 through 165

- In Levels 151 through 165, you must break various types of Blocks.
- No new Blocks or Power-ups are introduced.
- In Level 135, you must defeat the Cyclops.

STAGE 12: Observatory B

Levels 166 through 180

- In Levels 166 through 180, you must break various types of Blocks.
- No new Blocks or Power-ups are introduced.
- In Level 180, you must defeat Frank (a.k.a. Frankenstein's Monster).

Art and Visual Style

Overview

The overall theme is a cute and approachable haunted house. The imagery will include a lot of solid colors, very few textures and simple organic forms (somewhat similar to the animated TV series *Foster's Home for Imaginary Friends*).

Color Scheme

The color scheme will be warm, friendly and appealing to all types of players.

Here are examples of the potential look of the game:



Additional Color Concepts

(Updated September 10, 2013)

Haunted Monster Mansion Style 1 – From Color Concept to Finished Look



Color Concept 4



Finished Look

Haunted Monster Mansion Style 2 – Finished Look



Color Concept 1



Color Concept 2



Screen Mockups

Here are mockups of some of the game including rough UI, Blocks, effects and Paddle types (PLEASE NOTE: These are only working concepts and are *not* final game design):



Fonts

The Fonts and typography that will be used in the game – aside from the illustrated logo – has yet to be determined. Once the overall design is determined, the exact digital Fonts will be noted here.

Game Characters

Overview

The game takes place in and around a haunted mansion inhabited by seemingly countless cute Monsters. Our heroes – a young witch and her magical cat – break Blocks and various magical items to navigate through stages advance through the game.

The antagonists are Mansion inhabitants - monsters, ghosts, vampires, mummies, etc. – who must be defeated.

Main Characters

- **Maxine** – An old and wise witch, Trixie’s grandmother.
- **Trixie** – A young adult witch who is just learning to use her powers.
- **Ipswitch** – A talking black cat that is older and acts as Trixie’s guide and helper.
- **Monsters** – There will be a new Monster introduced in each Stage who will act as the “Boss” for that Stage. The Boss will be defeated in the final – 15th – Level of each Stage.

User Interface

Overview

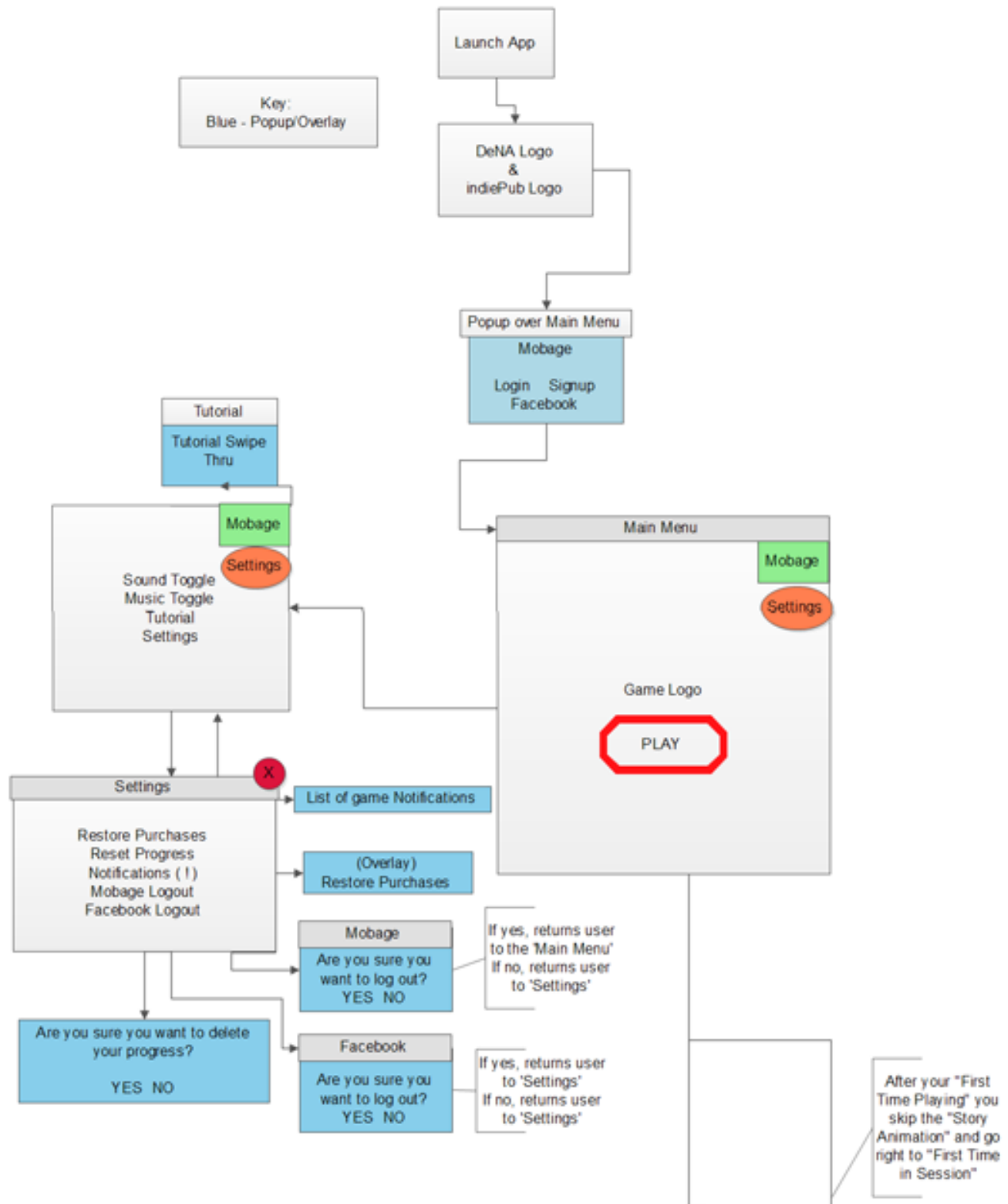
The User Interface (“UI”) should be simple and as incorporated as possible with the actual design of the game. Touching directly under the Paddle and moving one’s finger left or right controls the Paddle. The velocity of the Paddle can be impacted by the speed at which one moves their hand. If the Player’s finger is lifted from the screen and repositioned to another location the Paddle will move to the new location.

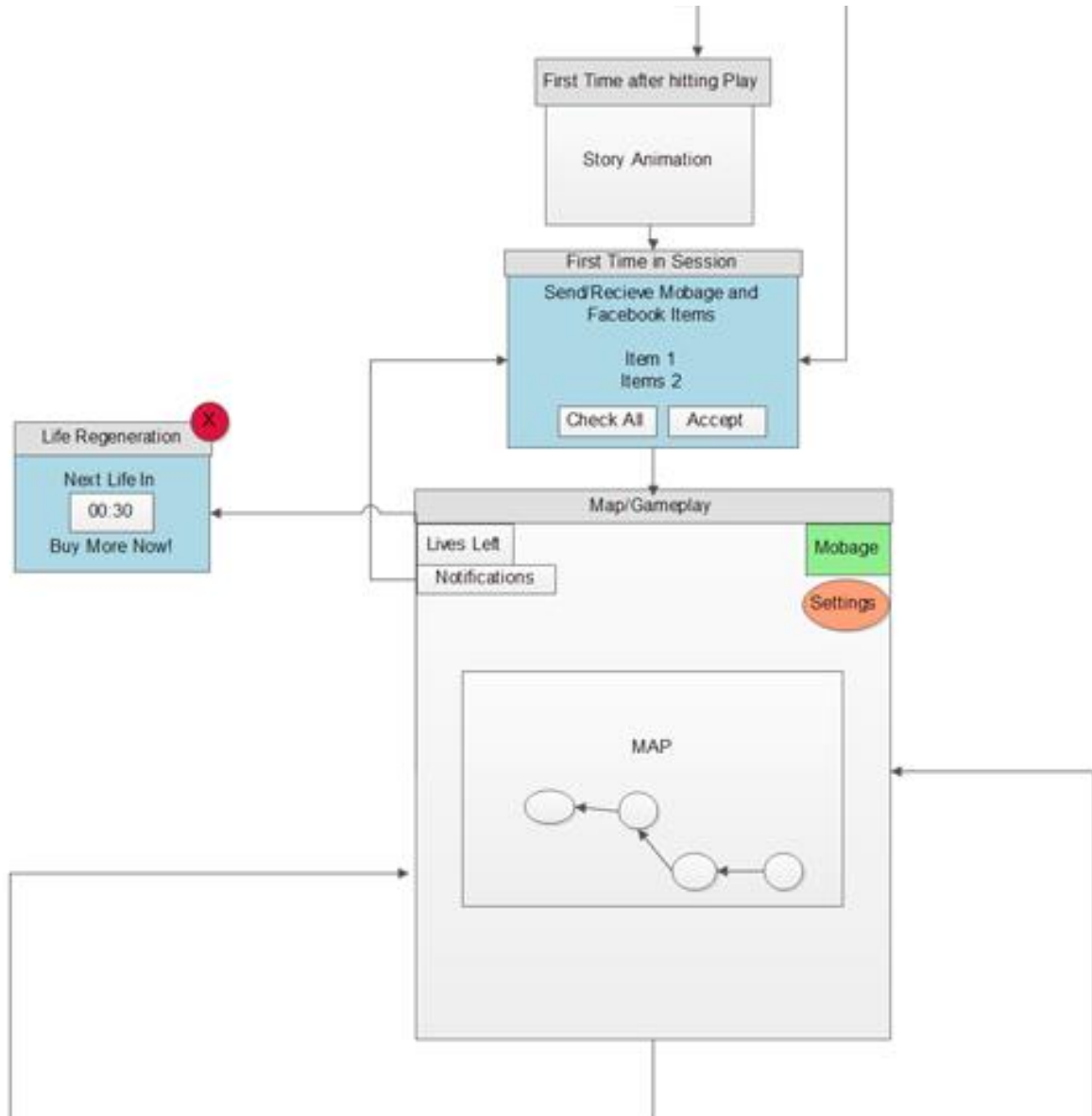
Power-Ups are seamlessly integrated with no need to touch outside of the Paddle zone. Additionally, the Ball reflects (bounces) at sharper angles as the Ball moves toward the edges of the Paddle (for example, if the Ball hits the right side, it tends to bounce more to the right).

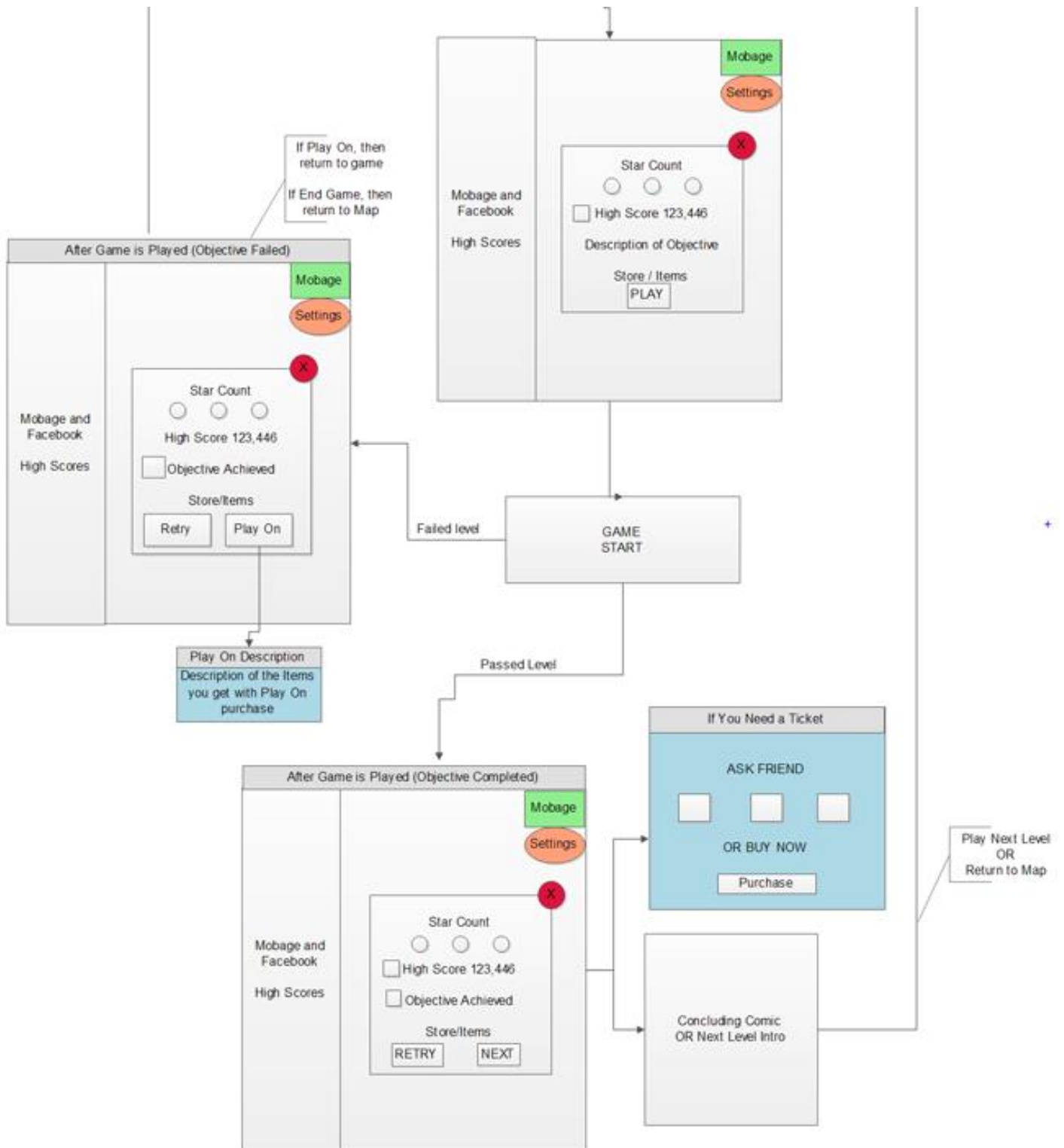
Menus are easily navigated simply by touching the desired functions.

User Flow (Chart)

The following diagram shows the Player’s experience as they go through the game. It includes menu pages and popup alerts.







Settings

The Settings button will be available at all times, on all screens (and able to be pressed at all times except when a Popover menu requires action).

It will be placed at the top of the screen so that it cannot be accidentally touched during active gameplay.

The Settings button also acts as the “Pause” function in the game so that, when Settings is pressed, it Pauses the game as-is and brings up the Settings Popover window.

Note that, during active game play, the Settings Popover will also show the Level Objectives (for that Level).

When the Settings is closed, the Player will see a timer count down from “3” to “Go!” and then the game action will resume, retaining all the elements (inc. speed, trajectory, Power-Ups, score, etc.) at the time the game was Paused.

Music and Sound Effects

Overview

The Sound Effects and Music will add a dynamic and diverse element to the large and diverse haunted house world.

Music Style

Music style will be sort of similar to *Luigi's Mansion* where orchestral instruments and pop music elements will be mated to make upbeat and good-feeling music but with a hint of *Haunted Mansion* feel (through instrumentation).

Songs will be split into different game types (similar to *Candy Crush*) where there will be:

- Main Menu Music
- Survival Mode Music
- Target Mode Music
- Timed Mode Music
- Boss Music

The overall music will share a similar catchy theme while keeping each individual song separate and unique (but related to the others).

Music will be short to prevent excessive app size and perfectly looped for user enjoyment (approx. 30-45 seconds per song).

Sound Effects

Sound Effects will vary from Block to Block and will include many unique Sound Effects for in-game elements as well as making unique dynamic changes to sound effects during gameplay.

Sound Effects will include:

- Menu flow and button press sounds.
- Story Sound Effects for "talking" characters and story/comic elements.
- Ball Hit sound effects for different levels and for hitting different objects (bouncing off wood, metal, stone, etc.).
- Paddle Hit sound effects.
- Block Hit sound effects.
- Differing between Blocks including sounds for normal Blocks materials like glass, metal, wood, stone, cloth. (Each hit will also have slight pitch changes to avoid the machine gun effect of the same sound playing over and over).
- "Combo-ing" Blocks by hitting multiple Blocks between hits of the Paddle having a musical element where each hit sounds another note on a scale.
- Chain Reaction Block Sound Effects and an added element at the end of a long chain .
- Grand Finale Block Sound Effects like a fireworks show (big and flashy).
- Explosive block Sound Effects.
- Unique sound effects for each Power-Up including:

- Shield
- Multi-ball
- Rocket/Gun Paddle
- Sticky Paddle
- Resize Paddle
- Acid Ball
- Electric Shock Paddle
- Reverse Control Paddle
- Rail Power-up
- Time Warp Ball (Bullet Time)
- Grenade Ball
- Speed Up/Slow Down Ball
- Magnet Paddle
- Flicker Ball
- Remote Control Paddle
- Any environmental effects.

Game Flow / Level Progression

The game will be based on Stages with each Stage being a part of the larger Story. A pair of Stages are typically related and often – not always – taking place in the same Room/Environment. The end of each Stage (the 15th Level of that Stage) will be a Boss-type situation.

There will be a Door that will precede each Stage. Except for the first Door, each will be locked and require that three (3) Keys be used to open each door. Players can either purchase the Keys or acquire them for free as gifted by Friends.

New [Blocks](#), [Paddles](#), [Ball Power-Ups](#) and [Board Power-Ups](#) will be introduced throughout the game.

Game Modes

Each Level in the Game will include an Objective that is based on that Levels' Mode. Note that the time is not limited* for a Mode unless specified.

The Mode types include:

- **Survival** – Clear all the Blocks on the Board using a specific, pre-determined number of Balls (usually 3).
- **Survival Supernova** – Earn a specified number of (~125% of the raw) Points to activate Supernova Power-Up and instantly clear the Board.
- **Target** – Hit a specific Target “Block.”
 - **Target Timed (with Limited Time)** - Hit and destroy a specific Target Block(s) within a specified time (e.g. 30 seconds) with unlimited Balls*.
 - **Target (Limited Balls)** - Hit and destroy a specific Target Block(s) using a limited number of Balls (3).
 - **Target Timed/Balls (with Limited Time and Limited Balls)** – Hit and destroy a specific Target Block(s) within a specified time (e.g. 30 seconds) using a limited number of Balls (3).
- **Timed/Limited Time** – Clear the board within a specified time and unlimited Balls*).

*Note that times and number of Balls cannot actually be infinite but will be set to a really, really big number (e.g. 9999 Balls and 9999 seconds) that will not be reached by a typical Player.

Game Levels

The following diagram illustrates the Levels, Modes and when Power-Ups are introduced (and, when purchasable, are unlocked).

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
1	Clear All/ Survival Mode	Stage 1: Wine Cellar	Standard and Chain Blocks
2	Clear All/ Survival Mode		Shield Board Power-Up
3	Timed (Easy) Mode		
4	Timed (Easy) Mode		
5	Target Mode		Multi-Ball
6	Target Mode		
7	Clear All/ Survival Mode		
8	Clear All/ Survival Mode		
9	Clear All/ Survival Mode		Rocket Paddle
10	Timed (Easy) Mode		
11	Target Mode		
12	Timed (Easy) Mode		
13	Clear All/ Survival Mode		Cauldron Block
14	Clear All/ Survival Mode		
15	Target Timed Mode		

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
16	Clear All/ Survival Mode	Stage 2: Dungeon	Unbreakable & Grand Finale Blocks
17	Timed (Easy) Mode		
18	Clear All/ Survival Mode		Sticky Paddle
19	Clear All/ Survival Mode		
20	Target Mode		
21	Clear All/ Survival Mode		Bomb Blocks
22	Timed (Easy) Mode		
23	Clear All/ Survival Mode		
24	Clear All/ Survival Mode		Resize Paddle
25	Target Timed Mode		
26	Clear All/ Survival Mode		
27	Clear All/ Survival Mode		Strong Block
28	Timed (Easy) Mode		
29	Timed (Easy) Mode		
30	Target Mode		

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
31	Clear All/ Survival Mode	Stage 3: Laundry Room (A)	Moving Blocks
32	Timed (Easy) Mode		
33	Clear All/ Survival Mode		
34	Clear All/ Survival Mode		Bumper Block
35	Timed (Easy) Mode		
36	Target Mode		
37	Timed (Easy) Mode		
38	Clear All/ Survival Mode		Acid Ball
39	Clear All/ Survival Mode		
40	Clear All/ Survival Mode		
41	Timed (Easy) Mode		
42	Clear All/ Survival Mode		Electric Shock Paddle
43	Target Mode		
44	Clear All/ Survival Mode		
45	Target Timed Mode		Supernova Ball

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
46	Clear All/ Survival Mode	Stage 4: Laundry Room (B)	
47	Timed (Easy) Mode		
48	Clear All/ Survival Mode		
49	Timed (Easy) Mode		
50	Clear All/ Survival Mode		
51	Clear All/ Survival Mode		
52	Target Mode		Reverse/Inverse Paddle
53	Clear All/ Survival Mode		
54	Timed (Easy) Mode		
55	Timed (Easy) Mode		
56	Clear All/ Survival Mode		
57	Timed (Easy) Mode		
58	Clear All/ Survival Mode		
59	Target Mode		
60	Target Timed Mode		

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
61	Clear All/ Survival Mode	Stage 5: Foyer (A)	Cross Explosive Block
62	Timed (Easy) Mode		
63	SuperNova Mode		
64	Clear All/ Survival Mode		
65	Clear All/ Survival Mode		
66	Timed Mode		
67	Clear All/ Survival Mode		
68	Clear All/ Survival Mode		
69	Target Mode		
70	Timed Mode		
71	Clear All/ Survival Mode		
72	Timed Mode		
73	Clear All/ Survival Mode		
74	Timed Mode		
75	Target Timed Mode		

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
76	Timed Mode	Stage 6: Foyer (B)	Rails Paddle
77	Clear All/ Survival Mode		
78	SuperNova Mode		
79	Clear All/ Survival Mode		
80	Timed Mode		
81	Clear All/ Survival Mode		
82	Target Mode		Time Warp Ball
83	Clear All/ Survival Mode		
84	Target Mode		
85	Supernova Mode		
86	Clear All/ Survival Mode		
87	Timed Mode		
88	Clear All/ Survival Mode		
89	Clear All/ Survival Mode		
90	Timed Target Mode		

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
91	Clear All/ Survival Mode	Stage 7: Front Den (A)	Grenade Ball
92	Timed Mode		
93	Clear All/ Survival Mode		
94	Timed Mode		
95	Clear All/ Survival Mode		
96	Target Mode		
97	SuperNova Mode		
98	Timed Mode		
99	Clear All/ Survival Mode		
100	Clear All/ Survival Mode		
101	SuperNova Mode		
102	Timed Mode		Speed Up/ Slow Down Paddle
103	Clear All/ Survival Mode		
104	Target Mode		
105	Clear All/ Survival Mode		

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
106	Target Timed Mode	Stage 8: Front Den (B)	
107	Clear All/ Survival Mode		
108	Timed Mode		
109	Clear All/ Survival Mode		
110	Target Mode		Magnetic Paddle
111	Clear All/ Survival Mode		
112	Timed Mode		
113	Clear All/ Survival Mode		
114	SuperNova Mode		
115	Clear All/ Survival Mode		
116	Clear All/ Survival Mode		
117	Timed Mode		
118	Clear All/ Survival Mode		
119	Timed Mode		
120	Target Mode		

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
121	Clear All/ Survival Mode	Stage 9: Library	Ghost Blocks
122	Timed Mode		
123	Target Mode		
124	Clear All/ Survival Mode		
125	Clear All/ Survival Mode		
126	Target Timed Mode		Flicker Ball
127	Target Mode		
128	SuperNova Mode		
129	Clear All/ Survival Mode		
130	Target Mode		
131	Clear All/ Survival Mode		
132	SuperNova Mode		
133	Clear All/ Survival Mode		
134	Timed Mode		
135	Target Timed Mode		

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
136	SuperNova Mode	Stage 10: Kitchen	
137	Clear All/ Survival Mode		
138	Clear All/ Survival Mode		
139	Timed Mode		
140	Target Timed Mode		Remote Control Paddle
141	Target Mode		
142	Clear All/ Survival Mode		
143	Clear All/ Survival Mode		
144	Target Mode		
145	Timed Mode		
146	Clear All/ Survival Mode		
147	SuperNova Mode		
148	Clear All/ Survival Mode		
149	Timed Mode		
150	Target Timed Mode		

UPDATE 1

(Note that no new Power-ups or Bricks are introduced in this first update.)

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
151	Clear All/ Survival Mode	Stage 11: Observatory A	
152	Clear All/ Survival Mode		
153	Timed Mode		
154	Supernova Mode		
155	Clear All/ Survival Mode		
156	Target Mode		
157	Clear All/ Survival Mode		
158	Timed Mode		
159	Clear All/ Survival Mode		
160	Target Mode		
161	Supernova Mode		
162	Clear All/ Survival Mode		
163	Timed Mode		
164	Clear All/ Survival Mode		
165	Target Timed Mode		

LEVEL	LEVEL TYPE/MODE	STAGE	ITEM INTRODUCED/UNLOCKED
166	Timed Mode	Stage 12: Observatory B	
167	Clear All/ Survival Mode		
168	Supernova Mode		
169	Target Mode		
170	Timed Mode		
171	Clear All/ Survival Mode		
172	Timed Mode		
173	Clear All/ Survival Mode		
174	Timed Mode		
175	Supernova Mode		
176	Target Mode		
177	Clear All/ Survival Mode		
178	Clear All/ Survival Mode		
179	Timed Mode		
180	Target Timed Mode		

Scoring

Level Objectives

Each Level in the game will have pre-determined Objectives that must be met before Stars or Points will be added to the Player's running/aggregate Total.

The Objectives for that Level will be displayed to the Player in the Power-Up Select box that slides over a Level. Here Players can:

- View the Level Objectives.
- View the Level Mode type.
- Activate (or purchase) Power-Ups.
- Start the game by pressing the "Play" button.
- Exit the Level.
- View the Leaderboard for that Level.

Level Objectives will be based on Mode-specific requirements. For example, in a Timed Target Mode, the Player will need to hit and destroy the Target before Time runs out (e.g. 30 seconds).

The Cat, Ipswitch, will present the Objectives with the Stage Boss appearing to show the Objectives for the final Level of each Stage.

The secondary/implied Objectives to earn all three Stars will be based on Points (see Scoring – Points and [Stars](#) sections below for details).

Scoring – Points

Players earn Points while playing each Level. Level Points are recorded for that Level – and placed on the Leaderboard - only when the Objective has been completed.

Players should see only the top ten (10) scores for each Board. After they have completed a Level, they should then see the top 10 scores. If their score is not in the top 10 scores, they should see their score – along with their rank - below the top 10 scores on that Level's Leaderboard.

Each Level will be designed with a Point Range in mind. Players will typically earn between 10,000 and 250,000 Points per Level with more Points generally available in higher Levels.

Points can be earned by the following methods:

- **Each Block destroyed** - A pre-set Point value is awarded per Block Hit by the Ball or destroyed via a Power-Up.
 - Values are based on the Block type (see the "[Block Points Chart](#)" below).
- **Time Bonus** – This Bonus is based on the time remaining (only on limited-time Modes) with Points awarded per second left on the countdown clock. It will be based on a pre-set value.
 - 500 Points per remaining second.

- +5000 Bonus Points for each 10-second increment remaining. (e.g. If 13 seconds remain, the Player receives $(13 \times 500) + 5,000$ or 11,500 Points)
- **Consecutive Hit Multiplier** – A Point Multiplier is added to the Points earned for consecutive Blocks Hit. Any Ball hitting the Paddle resets the Point multiplier. This scales so that each Block's Points are multiplied by the number of consecutive Hits.
 - e.g. 1st Standard Block = 100 Points; 2nd consecutive Standard Block = 200 Points; 3rd consecutive Standard Block = 300 Points; etc.
 - Blocks destroyed in a Chain do not count (although the Chain Block value will be affected by the Consecutive Hit Multiplier).
 - The Wall or edge of the Board does not reset the Counter.
 - A Ball hitting the Web Shield *does* reset the Counter.
- **Points per Power-Up (Caught)** – These are based on pre-set values per Power-Up.
 - Values are based on the Power-Up type (see the "[Points Chart](#)" below).
- **Remaining Blocks Multiplier** - In Target Mode only, pre-set values per Block.
 - Players are awarded x2 Points per Block for the first 4 Blocks remaining (200 to 800 Points).
 - Players are awarded x3 Points per Block for 5 to 9 Blocks remaining (1500 to 2700 Points).
 - Players are awarded x4 Points per Block for 10 to 14 Blocks remaining (4000 to 5600 Points).
 - Players are awarded x5 Points per Block for 15 to 24 Blocks remaining (75,000 to 120,000 Points).
 - Players are awarded x6 Points per Block for 25 or more Blocks remaining (1500,000 or more Points).
- **Unused Balls Bonus** – Players earn a pre-set value per Ball remaining at the end of any Mode that includes a limited number of Balls. (Balls are not calculated in the Raw Points).
 - Players are awarded 500 Points for one Ball remaining.
 - Players are awarded 1000 Points for two Balls remaining.

Points (Chart)

The Charts below show the Point values for all Blocks, Power-Ups and Balls.

Note that these may change at any time to help balance the game. Please check with the Level Designer for the most up-to-date Points.

Block	Points	Multipliers	Notes
Standard Block (Book)	100		
Standard Block (Vial)	100		
Bomb Block	100	(+25) per block hit?	
Bumper Block	50	(+10,000) Bonus	Cannot be destroyed. 10,000 Bonus Points when all are activated (Green).
Cauldron Block	150	(+10) pts per Block in a Chain	
Chain Block	150	(+10) pts per Block in a Chain	
Cross Explosion Block	150	(+10) pts per Block in a Chain	
Ghost Block	200		
Ghost Boss	2000		
Ghost Sub-Boss	500		
Ghost Vial Block	150		
Grand Finale	1000		
Unbreakable Block	500		Only the Supernova and Acid Balls break this Block.
Strong Block	200		
Jack-O-Lantern (Elemental Block)	500		
Vampire (Elemental Block)	500		
Witch (Elemental Block)	500		
Werewolf (Elemental Block)	500		
Torch/Wood (Elemental Block)	100	(+10) pts per Block in a chain	

Power-Up	Points	Multipliers	Notes
Death	500		Lose current Ball.
Electric Shock Paddle	500	(+10) pts per Block in a chain	
Invert Control Paddle	500		
Life	500		Add one Ball to the current game
Grow Paddle	500		
Shrink Paddle	500		
Rails Paddle	500		
Rocket Paddle	500	(+10) pts per Block in a chain	
Shield Board	500		
Stick Paddle	500		

Ball	Points	Multipliers	Notes
Stick Paddle	500		
Supernova Ball	500		
Fire Ball	500		
Garlic Ball	500		
Acid Ball	500		
Flicker Ball	500		
Grenade Ball	500		
Multi-Ball	500		
Slow Down Ball	500		
Speed Up Ball	500		
Time Warp Ball	500		

Stars

Three (3) Stars can be earned per Level based on:

- 1) Level Objective completed (**First Star**); and
- 2) A percentage of the available raw Points in a Level.
 - a. The **Second Star** will be earned when the Player earns 110% of the available raw Points.
 - b. The **Third Star** will be earned when the Player achieves 125% of the available raw Points.

Note that a Player *must* complete the Level Objective to earn any Stars (even if the Points warrant the other two Stars).

World Editing

Overview

We will be creating a Level Designer, which will allow any designer (or interested party) to easily craft his or her own game levels. This independent application will be delivered separately from this document with appropriate usage instructions. The application, however, is critical to the production process.

Monetization

The game will be free-to-play with the following items monetized for the initial release of the game (with the understanding that more could be added later):

- **Full Lives Pack** – You buy a set of 5 Lives for \$0.99. This is in instead of waiting for the Lives to regenerate. This is available at first launch of the game.
 - This is only available when a person has zero (0) lives left.
 - A Player's Life count will never Pass 5, no matter how many are available when the Full Lives Pack is purchased.
- **Web Shield** – Three, one-time use for \$0.99. This puts a protective web under the Paddle that bounces the Ball back into play. With each consecutive hit it becomes visibly damaged. After 3 hits it disappears. Unlocks at Level 2. This is enacted at the beginning of a Level.
- **Multi-Ball** – Three Multi-Balls for \$0.99. This will be used at the start of the level. The Ball, once it hits the first object (wall or Block) it will divide into multiple Balls. It will release six (6) Balls in addition to the Player's active Ball. This works for the next three Balls played, regardless of the number of Levels. This is unlocked – available for purchase – at Level 5.
- **Rocket Paddle** – Three Paddles, each with one-time use, for \$0.99. This shoots bullets or rockets from the Paddle for 6 seconds. Unlocks for purchase at Level 9.
- **Supernova Ball** – One ball for \$0.99. This destroys the entire board in a grand fireworks display. One-time use as it is destroyed upon use. This is unlocked – available for purchase – at Level 45.
- **Play On** – One re-play for \$0.99. The player gets a Ball, a Web Shield and extra Time for Time-based levels.
- **Master Key** – One Master Key for \$0.99. This is the equivalent of three Keys. In other words, it will instantly progress you through a single Stage Door/Gate without requiring three Keys be sent by Friends.

Each player will have the ability to select and apply a Power-up prior to playing each Level. If the item has been purchased, they can select it and it will apply to that Level. If they have not purchased it and they select it, they will immediately be prompted to purchase that power-up.

Players can also request Keys from their Friends to pass through locked areas. Three Keys are required to unlock each Door or Gate.

Gifting

A Player can request that a Life be sent to them each time they play. They can make the request of any or all their Facebook Friends but only one request will be sent to each person once per day.

The system will also automatically send an alert to Facebook Friends when a person has been stuck at one level for 24 hours or longer. It will request a Life or Multi-Ball be sent, once per Friend per day.

Players can also gift items to their Friends:

- **Life** – One Life can be gifted to each Facebook Friend once per day.

- **Key** – One Key can be gifted to each Facebook Friend once per day. This must be requested by a Player who needs it for a Door. Keys cannot carry over to the next Door (they are only good for the Door for which they were Gifted).

Game Titles

These are the working titles for the Gam pending approval from DeNA's legal department:

- **Brick Witch: The Magical Brick Breaking Game** (*current*)
- Trixie's Brick Quest
- Trixie's Quest

Appendix A:

Design Specifications Document ver. 1.0

PLEASE NOTE: This Appendix and all its appropriate sections have been combined with the larger GDD.

Appendix B:

Outline of Server Architecture Responses

Could you please provide us with the server architecture overview document, covering your answers to the following questions?

2 documents are attached which covers the conversation. One covers are back-end platform and the second covers Fraud detection and prevention

...and what kind of features you are going to achieve by server-side implementation?

I believe that this are covered in the docs or in the body of this e-mail. If not, please let me know what open questions you have.

Questions

1. Do you have enough experience in developing and maintaining the backend server for a game?

Yes, we do.

2. Are you going to set up physical servers on your own or are you going to use any sort of Cloud service?

Cloud service. If needed, we do have the ability to have our own dedicated servers with our cloud providers.

3. What languages and server framework are you going to use for server side implementation (PHP/Perl/Javascript, etc.)

[Freeman, please respond]

4. What kind of DB are you going to use for server side implementation (MySQL/MongoDB, etc)

MySQL

5. Want to know your server operation and transaction capability.

- How much of DAU or MAU volume is your server able to handle based on your experience?

Well over 1M DAU. We have tested numbers greater than this and are confident that the infrastructure can handle this type of load.

6. We would like your company to keep maintaining the game server until the end of life of this game. We will pay a maintenance cost until then. Can you please estimate the maintenance cost based on a few of DAU volume assumptions ?

Thank you. We suggest that we receive a 10% revenue royalty on the game for back-end support, cost, people, etc. This allows us to participate in the continued success of the game. Let's discuss next week when I am in Tokyo.

7. Do you have any concerns about the server side implementation and its maintenance ?

No, we do not.

Also, please describe what kind of features you are going to achieve by server side implementation in the server architecture overview document.

Server Requirements

Must be able to do the followings without updating client application via AppStore.

1. Add new stage.

- **Will need to be able to download Unity assets.**

This is definitely do-able for content additions (new levels, models, environments, etc.)
However, Unity asset bundles do not include compiled code, so anytime new code would be needed (for any new functionality or critical bug-fix) we would have to update through the standard publishing flow of iTunes / Google Play.

2. Configure stages parameters, automatically check when online.

- **parameters are associated with the difficulties of the stage.**

This is can also be done from a front end perspective as well.

3. Must be able to force players to update client application to the newer version if required.

- **For the purpose of critical bug fixes and improvements.**

We can also do this as well. Once a day on startup the app can check against the server to see if the client's version number matches the most up-to-date version.

4. Remote notification to the devices for us to be able to invite players to come back to our game if required. (Mobage SDK provides this capability).

We will implement Mobage SDK.

5. Update the text for in-game announcement if required.

- **This is to communicate important news to players.**
- **Ex. server side maintenance period.**
- **Ex. server bug report and apology announcement.**

Note: DeNA 1st games usually implement the WebView "News" page for this purpose.

Implementing a web view with the DeNA "News" page is not a problem at all.

Appendix C:

Security Measures – Fraud Detection & Prevention

User Authentication

IndiePub currently has an authentication API which is used to register and administer logins.

Currently, a user and password combination or a Facebook account can be used to log in. Upon successful login to the API, the API returns an authentication token and minimal user data that the app can use to login a user to the app.

API Security

indiePub's gaming API is built following industry standards to minimize the risk and effects of attacks or forgery.

- **Session Management**
 - The API uses revocable Access Tokens for session management.
- **Input validation**
 - Each API call has documented acceptable Data and Content types. Calls are validated and unsuccessful calls are logged for possible review.
- **Output Encoding**
 - Our API responses are all JSON encoded. Additionally, we specify Content-type headers and X-Content-Type-Options: nosniff header to reduce the risk of XSS attacks.
- **TLS (SSL) connection for all communication**
 - All communication between the API and clients happens over secure connections to prevent eavesdropping and man-in-the-middle attacks.
- **Device Logging**
 - The API logs the device MAC Address from which every request with an Access Token is originating from. The devices are tied to the userid through the access token. The user will be notified through email of any calls that originated from an unknown device at which point the user can register the device or revoke the token used.

In-App Purchase Receipt Validation - Apple

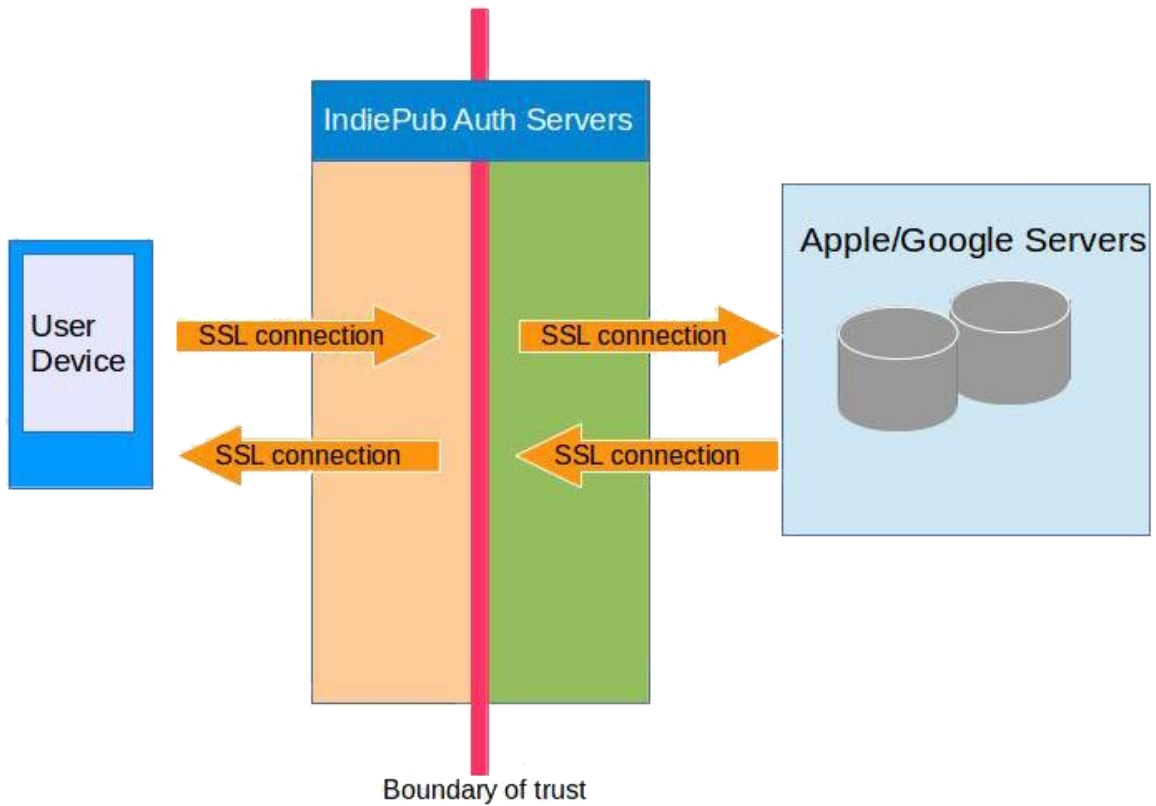
IndiePub has authentication API for iOS purchases.

When a user purchases an item from the store, the app validates the authenticity of the receipt. indiePub's Auth servers act as proxy Servers which forward a request from the client to the Apple servers. When the Auth server receives a response from Apple, it checks whether the bundle ID and transaction ID correspond to the App making the request. If receipt is valid then it forwards the data back to the client.

The connection between the App and the Auth Server is over SSL and so is the Auth Server-Apple Servers connection. SSL is used to prevent man-in-the-middle attack. Receipts for Consumables are checked to ensure that there is no repeated use of a receipt.

Receipt Validation

Diagram representing the connections between a client device and Apple or Google servers through indiePub's Auth servers during receipt validation



Encrypted Local Data Storage

Local data storage is kept safe from user tampering through our own quick-encryption algorithm which is used to obfuscate the key-value pairs stored in a local plist file.

String values are XORed with an arbitrary encryption string stored in the application binary. Integer values are salted with a large, arbitrary prime number before being stored as strings XORed with the encryption key.

Changing these values or keys inaccurately (through user tampering) will cause undefined behavior in the game, resulting in a loss of progress for the user.

Code Obfuscation

Unity is built on top of the Mono platform which is an open-source multi-platform implementation of Microsoft's .NET framework.

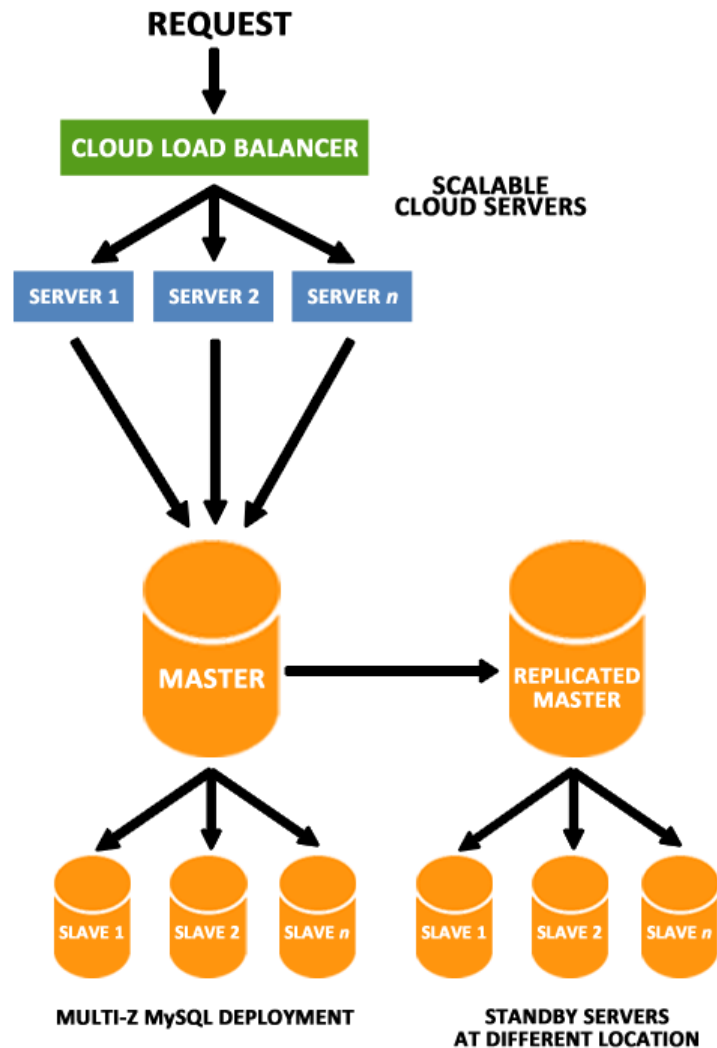
In order to prevent reverse engineering and executable tampering, all Mono scripts will be obfuscated before being compiled into the executable Mono assembly.

A checksum is also used upon application start to verify whether or not the Mono assembly has been tampered with or changed in any way.

Appendix D: API Architecture

The game will have a RESTful API that handles requests from the app.

- Initially the web servers will be two 4GB EC2 cloud servers running Nginx and PHP-FPM.
- These would be load-balanced by an elastic load balancer.
- The servers can scale in size and quantity as the requests and Daily Active Users (DAU) increase.
- The database will be a Multi-Z MySQL deployment, which is a high availability deployment with near real-time replicated standby servers. These servers are in a different geographical location, so if the primary Master system crashes or has a failure, the replicated standby servers are automatically available.



Daily Active Users	1,000	10,000	100,000	1,000,000	10,000,000
Daily API Requests	240,000	2,400,000	24,000,000	240,000,000	2,400,000,000
Concurrent Requests	3	28	278	2778	27778
Daily Bandwidth (GB)	1	7	69	687	6867
4GB API Servers	1	1	1	4	40
4GB Backup API Server	1	1	1	0	0
Total API Servers	2	2	2	4	40
Write Requests / sec.	2	14	139	1389	13889
Read Requests / sec.	2	14	139	1389	13889
8GB Write Database	1	1	1	1	0
16GB Write Database	0	0	0	0	1
8GB Read Databases	0	0	0	0	1

Assumptions:

1. User plays 20 levels daily on average.
2. Each Level potentially has 12 API calls.
3. A 4GB Ram 2VCPU sever can handle 700 concurrent requests.
4. 1 API request = 1 DB request.
5. 50% writes/ 50% reads.
6. Benchmarks 8GB Database handles 12000 writes.
7. A MySQL on 8 GB RAM slave handles 20,000 reads/sec.
8. A 16GB MySQL can optimally handle 22,000 inserts.
9. Average bandwidth per request is 3KB.

Appendix E:

DeNA App Development Guidelines & Additional Technical Specifications

Supported OS and Devices

(DeNA section II-1)

- Brick Witch will support iOS 6 and above.
- The Android release will support Android 2.3/API 10 and above.

Complying with Established App Store/Google Play Guidelines

(DeNA section III-1)

Brick Witch will comply with the established guidelines and requirements for the appropriate app store:

- iTunes (iOS)
- Google Play (Android)
- Amazon (Android)

Support for: iOS Universal Build, the iPhone 5 Screen Size and Retina Display

(DeNA section III-2)

The game app will be “Universal” according to Apple’s specs at the time the game is developed so the game will be playable on iPod Touch, iPhone and iPad.

It will also be optimized for iPhone 5 and Retina display.

Ban on Using UDIDs on iOS Devices

(DeNA Section III-3)

The app will not collect or utilize UDIDs. We will utilize the Mobage SDK.

File Size

(DeNA Section III-4)

The game will be developed with file size in mind, keeping below the 50 MB limit.

Version Information

(DeNA Section III-5)

The naming convention used for Brick Witch will consist of three digits, separated by periods. For example: ver. X.Y.ZZ where X is the Major version, Y is the Minor version and ZZ is the build version.

Offline Behavior

(DeNA Section III-6)

Brick Witch will be playable offline with online elements being for:

- Initial user login to the game.
- Social promotion(s) to post game progress on Facebook.
- Market-specific Achievements and Leaderboards.
- The game will sync progress, analytics, and achievements when reconnected to the internet.

Users who do not want to log into their Mobage or Facebook accounts will be able to play as “Guests” using a Mobage Guest account.

Launch Time

(DeNA Section III-7)

Our goal is to create a game that completely launches within 6 seconds of an initial tap.

Resume Time

(DeNA Section III-8)

The game will resume in less than 2 seconds.

Splash Screen

(DeNA Section IV-1)

We will prepare and implement a Splash screen that will follow the DeNA and indiePub logos.

The Timing of Displaying Login Screen

(DeNA Section IV-2)

The game’s Login Screen will appear as a Popover (“Popup”) over the Main Menu screen. This will be after the Splash Screen. (See “[User Flow \(Chart\)](#)” section in the GDD”).

Log-In

(DeNA Section IV-3)

Users will be able to log into the game using either:

- Mobage Account
 - Use an existing Mobage User account
 - Create a new Mobage User account
 - Create a new Mobage Guest User account
- Facebook Account

Naming Virtual Currency on iOS (game points)

(DeNA Section V-1)

The Mobage SDK will be used for all in-app purchases. A virtual currency will not be utilized in this game. ([See the Mobage Developer web site site section regarding “Virtual Items Purchase with Cash”](#)).

Setting a Price for Payment-Based In-Game Item

(DeNA Section V-2)

See the “[Monetization](#)” section of the GDD.

Items prices listed in the GDD are suggestions based on real, US currency, but will reflect the local currency of each country. The proposed prices are listed below but are subject to DeNA’s revisions.

Using Mobage SDK

(DeNA Section VI-1)

This game will utilize the Mobage SDK for:

- User registration (except where the User selects Facebook).
- In-Game purchases as allowed by each marketplace.

Facebook Connect

(DeNA Section VII-1)

We will utilize both Facebook and Mobage in this game, although Users will select one when they first play the game and utilize/reference only the one throughout the game. (This selection can be undone in the Settings by logging out of one and in to the other).

Fonts

(DeNA Section VIII-1)

The fonts to be used in the game are YTBD (yet to be determined). All fonts used will be properly used according to legal guidelines.

Sound

(DeNA Section VIII-4)

(See the “[Music and Sounds Effects](#)” section in the GDD).

All music will be created specifically for this game. They will be .OGG to work within Unity.

Illustration and Assets, Including Photos

(DeNA Section VIII-5)

All the imagery, aside from company-specific logos used with appropriate legal rights, will be created specifically for this game.

Language Support

(DeNA Section IX-1)

We plan to offer English and Japanese for the initial launch of the game. It is possible that several other languages could be added in an update including:

- French (confirmed)
- Italian (confirmed)
- German (confirmed)
- Spanish (confirmed)
- Portuguese
- Russian
- Korean
- Chinese

Outline of Server Architecture

(DeNA Section X-1)

This was addressed in a previous email with DeNA and will be added to the GDD as “[Appendix B: Outline of Server Architecture Responses.](#)”

Data Storage Location

(DeNA Section X-2)

This was addressed in a previous email with DeNA and will be added to the GDD as “[Appendix B: Outline of Server Architecture Responses.](#)”

Updating Game Assets following Level Tuning

(DeNA Section X-3)

This process (Adding New Stage and editing parameters) will be developed and implemented by indiePub. DeNA will be able to administer the Level Tuning through a Dashboard.

Forced Update of Applications

(DeNA Section X-4)

This process will be developed and implemented by indiePub. It will require that a user updates the game before proceeding (as long as they are online).

Push Notifications

(DeNA Section X-5)

We will implement Remote Notification provided by Mobage (implementation on the client side and the server side is necessary).

These notifications can be administered by either indiePub or DeNA.

([See the Mobage web site section concerning “Remote Notifications”](#)).

Support for Announcements and News

(DeNA Section X-6)

We will broadcast the Mobage news Feed in-game using utilize a web view that does not require the app to be updated. These are pushed to the game from a Dashboard indiePub will create and can be administered by indiePub or DeNA. (Note that the player will need to be online to Announcements and news).

Customer Support Operation Tool

(DeNA Section X-7)

We will develop a custom web-based Customer Support Operation Tool for DeNA to administer online Customer Support request. Items captured will include but not be limited to (as requested by DeNA): Game progress, items owned by the player, item purchase history, etc.

Obtaining Logs

(DeNA Section XI-3, XI-2, XI-3)

indiePub will use Flurry to generate logs based on DeNA's "List of Commonly Use(d) Log" list.

Security Measures

(DeNA Section XII)

These have been addressed in the "Fraud docs" provided by indiePub. These have been added to the [GDD as "Appendix C: Security Measures."](#)

Appendix F: Story Scenes and Dialog

MAIN CHARACTERS

Maxine – An old and wise witch, Trixie’s grandmother.

Trixie – A young adult witch who is just learning to use her powers.

Ipswitch – A talking black cat that is older and acts as Trixie’s guide and helper.

Monsters – There will be a new Monster introduced in each Stage who will act as the “Boss” for that Stage. The Boss will be defeated in the final – 15th – Level of each Stage.

PRESENTATION

The story sequences will be shown as still or semi-animated (simple, perhaps looping animations) characters *a la Plants vs. Zombies 2*. A talking character will slide into view over the Game Board, “Talk” through text in a Speech Bubble and slide off screen when the conversation is done. Then the Level will begin.

Each set of conversations will take place after a Stage Door is unlocked and offers a secondary reason for people to want to continue to the next Level/Stage.

Our goal is to keep the conversations short, with 3 to 7 dialog boxes per Story segment.



The repetition of bring Ipswitch – the cat – on to the screen first establishes him as the wise cat who offers words of encouragement and advice. This can be important if we use him to act as an –in-game tutorial – Players will be familiarized with Ipswitch’s appearances.

Dialog

OPENING SEQUENCE – STAGE 1 – INTRODUCTION

MAXINE slides onto the screen from the RIGHT.

MAXINE

My lovely Trixie!
It is time for you to become
a true Witch!

TRIXIE slides onto the screen from the LEFT.

TRIXIE

I'm ready, Grandmother!
Where do I begin?

IPSWITCH the cat slides onto the screen from the RIGHT, joins MAXINE.

MAXINE

Ipswitch, my wise and trusted friend
will help guide you through
the Mansion to begin your training.

IPSWITCH

This will be a tough journey, young Witch.
You will need to defeat many Monsters
to learn new spells and improve your magic.

TRIXIE

I'm ready, Grandmother.
C'mon, Ipswitch,
let's get started!

IPSWITCH, MAXINE and TRIXIE slide off screen. Level 1 begins.

STAGE 2 – START LEVEL 16

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

You did well with your
first set of Trials, young Witch,
There are many more Monsters in the Mansion.

TRIXIE slides onto the screen from the LEFT.

TRIXIE

Are you kidding?
That was easy breezy!
Bring 'em on!

IPSWITCH

That's the spirit, Trixie!
(Just be sure to avoid the bad Spirits.)
Now let's go get 'em!

TRIXIE and IPSWITCH slide off screen. Level 16 begins.

STAGE 3 – START LEVEL 31

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

That sure was a Ghostly experience.

TRIXIE slides onto the screen from the LEFT.

TRIXIE

It wasn't so bad.
I could do that all day!

IPSWITCH

That's the spirit, Trixie!
Now it's time to really clean house!

TRIXIE and IPSWITCH slide off screen. Level 31 begins.

STAGE 4 – START LEVEL 46

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

Way to tidy things up, Trixie.

TRIXIE slides onto the screen from the LEFT.

TRIXIE

It was a Clean Sweep
And I did not even need to use a broom!

IPSWITCH

Now it is time to truly take those
Monsters to the cleaners
once and for all!

TRIXIE and IPSWITCH slide off screen. Level 46 begins.

STAGE 5 – START LEVEL 61

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

You are relay doing well, Trixie!

TRIXIE slides onto the screen from the LEFT.

TRIXIE

Thanks, Ipswitch!
What's up next?

IPSWITCH

It seems the Butler really did it this time.
You have to break a lot of glass
to put him back in his place.

TRIXIE

He's going to get served!

TRIXIE and IPSWITCH slide off screen. Level 61 begins.

STAGE 6 – START LEVEL 76

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

Wow, Trixie, you are doing quite well!

TRIXIE slides onto the screen from the LEFT.

TRIXIE

Thanks, Ipswitch!
You are a lot of help.

IPSWITCH

Now we need to take down the
Creepy Cleaning Lady!

TRIXIE

Ooh, la la!

TRIXIE and IPSWITCH slide off screen. Level 76 begins.

STAGE 7 – START LEVEL 91

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

You're becoming quite the witch, Trixie!

TRIXIE slides onto the screen from the LEFT.

TRIXIE

You're a great guide, Ipswitch!

IPSWITCH

Now you must take on
and ancient Voodoo Witch Doctor.

TRIXIE

I'm on pins and needles!

TRIXIE and IPSWITCH slide off screen. Level 91 begins.

STAGE 8 – START LEVEL 106

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

Now you are really in the
thick of things, Trixie!

TRIXIE slides onto the screen from the LEFT.

TRIXIE

Who must I defeat now, Ipswitch?
I'm ready to become a powerful Witch!

IPSWITCH

This one is a real nail biter.
Or, really, a neck biter.

TRIXIE

I know what's at stake.
I'll take a stab at it!

TRIXIE and IPSWITCH slide off screen. Level 106 begins.

STAGE 9 – START LEVEL 121

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

You are well on your way to becoming
quite powerful, Trixie!

TRIXIE slides onto the screen from the LEFT.

TRIXIE

I really love to learn how to
be a better witch!

IPSWITCH

Then you'll love this next room.
The Sea Creature is waiting for you
in the Library.

TRIXIE

Time to hit the books!

TRIXIE and IPSWITCH slide off screen. Level 121 begins.

STAGE 10 – START LEVEL 136

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

Wow, that was amazing, Trixie!

TRIXIE slides onto the screen from the LEFT.

TRIXIE

I know, right?!

IPSWITCH

Think you can cook up a few new spells?
It's time to head to the Kitchen.

TRIXIE

Their geese will be cooked this time,
for sure!

TRIXIE and IPSWITCH slide off screen. Level 136 begins.

STAGE 11 – START LEVEL 151

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

Welcome to a whole new stage in your adventure,
Trixie!

TRIXIE slides onto the screen from the LEFT.

TRIXIE

This sure is fun and exciting! What's next
in this wacky monster mansion?

IPSWITCH

It's time to head to the Observatory and defeat
the mighty Cyclops!

TRIXIE

I'll keep my eye on the prize, Ipswitch!

TRIXIE and IPSWITCH slide off screen. Level 151 begins.

STAGE 12 – START LEVEL 166

IPSWITCH the cat slides onto the screen from the RIGHT.

IPSWITCH

Way to zap that Cyclops, Trixie! I'm surprised
he didn't see that coming.

TRIXIE slides onto the screen from the LEFT.

TRIXIE

Who's next in this magical adventure, Ipswitch?

IPSWITCH

Now you have to face Frank, a monster with
an electric personality. But watch out, he has
a few loose bolts.

TRIXIE

Time to go mash that blockhead!

TRIXIE and IPSWITCH slide off screen. Level 166 begins.

Appendix G: Milestones & General Work Flow

Block Breaking Game - Timeline			2013																2014									
			AUG				SEP				OCT				NOV				DEC				JAN					
Deliverables	Manager	Duration	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W5	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	
Prototype Development			1 w																									
Basic Gameplay	Tim R.	1 w																										
Server Proposal	Freeman C.	1 w																										
Level Creation Flow	Tim R.	1 w																										
Concept Art	Art V.	1 w																										
Alpha Development			6 w																									
Tool Creation	Tim R.	2 w																										
Web Services	Freeman C.	4 w																										
Art Assets	Art V.	4 w																										
UI Implementation	Tim R.	3 w																										
Mobage SDK	Tim R.	1 w																										
Facebook SDK	Tim R.	1 w																										
QA Testing 1			1 w																									
Feature Testing	Jay F.	1 w																										
Bug Fixing	Tim R.	1 w																										
Beta Development			6 w																									
Level Design	Jessica S.	4 w																										
Level Culling	Team	1 w																										
Level Integration	Tim R.	1 w																										
QA Testing II			2 w																									
Level Testing	Jay F.	2 w																										
Bug Fixing	Tim R.	2 w																										
Release Candidate			1 w																									
Submission Assets	Art V.	1 w																										
Prepare RC Build	Tim R.	1 w																										
QA Testing III			2 w																									
Device Testing	Jay F.	1 w																										
Final Testing	Jay F.	1 w																										
Bug Fixing	Tim R.	2 w																										
Update 1 Development			2 w																									
Level Design	Jessica S.	1 w																										
Level Testing	Jay F.	1 w																										
Level Integration	Tim R.	1 w																										
Android Port Development			3 w																									
Android Services	Tim R.	2 w																										
Device Testing	Jay F.	1 w																										
Bug Fixing	Tim R.	1 w																										
Annotations																												

NOTE: “Joe S” replaces “Art V” for all above instances.

Appendix H:

Future Features & Ideas

This Appendix is intended to house suggestions features, game elements and other ideas we have for the game that will not or cannot be included in the initial release of the Game. Anything in this section may be used in whole, part or not at all in future versions (“updates”) of the Game.

Additional Block Types (B-List)

Element-Specific Block – There are two types of Elemental Blocks: Environment-based (Moonlight changes Standard Blocks to Werewolf Blocks) and Element-Based (Ice breaks Ice Block).

- A Vampire Block is destroyed by environmental light hitting, a Fire Ball or a Garlic Ball.
- Werewolf Blocks are killed by silver Balls.
- Wooden block that’s chain with fire.
- A jack-o-lantern that is hit with a fire ball lights up and is then one additional hit from destruction.
- A witch Block which melts upon being doused with a water ball.

Fire Block – The Fire Block can ignite surrounding Blocks and does 50% damage to them. If they are 2-Hit Blocks, only one additional Hit will be required to destroy them. Also, your ball can catch on fire and does 200% damage.

- Torches, candles, candelabra and floating fiery potions.

Ice Block – Ice Blocks are constructed from frozen water and require 2 to 4 hits to crack through. Witches can cast these difficult Blocks to break.

- Ice cube.

Multiplication Block (Makes More Blocks) – Multiplication Blocks create multiple Blocks when struck, resulting in 4 new Standard Blocks, one on each side (providing no other adjacent Blocks).

- Jelly Blobs, Ghost

Sorcery Block – The Sorcery Block changes a Ball’s path (from linear to a random arch) by grabbing the Ball, hold for a brief period and then shooting it back to the board in a semi-random direction. This may make it harder for the user to return the Ball.

Random Block – The Random block results in a Random Power-up when hit. The Block has a series of symbols that rotate and stop like a mini slot machine when hit.

Additional Block Types (C-List)

Invisible Block – The Invisible Block cannot be seen in the environment except for an opaque shine. May be destroyed with 1 to 4 hits.

Extra Play Block – A Health Block releases a falling Life icon to catch or can simply add a Life/Ball.

Can also be an Extra Time Ball.

Magnetic Block – This block attracts the ball and causes the ball to strike it. It also changes the Ball's trajectory and velocity. Magnetic Blocks attract in a radius of 2 Blocks to all 8 surrounding Blocks.

- Magic hidden doors, black portal hole, and crypts.

Repelling Block – This block repels the Ball and causes the Ball to increase in velocity by 2% per pass. This results in the ball receiving a new trajectory and velocity. Repelling Blocks repel in a radius of 1 block to all 8 surrounding Blocks.

- A knight's shield.

Shoot Back Block (Missile / Bad Ball)– These Blocks return fire and shoot back at the player. They can spawn any projectile at any rate. The Blocks continue for 1-4 hits until they are destroyed.

- Striking a mummy block may cause it to "shoot" a wrap at the player.
- An imp with a fireball, witch with a spell, vampires shooting bats, crumbling Blocks, cute snake spitting jelly, black suit of armor which shoots a crossbow or swings a sword creating air pressure animation.

Additional Paddle Types (B-List)

Swat (Push Up for More Force on Ball) – This Power-Up turns the Paddle into an air hockey Paddle: It can be moved up and down to create additional thrust on the Ball equal to its forward velocity + the Ball's speed.

Rails (Constrains Ball) – This Power-Up creates two parallel beams emanating from the Paddle such that the ball is trapped and cannot move outside of the beams for 5 seconds. During this time the user cannot lose their Ball and will do a tremendous amount of destruction.

Remote Control – The ball will move with the movement of the Paddle. When the Paddle strikes the ball it is then controlled "remotely" by moving the Paddle. This lasts for 6 seconds. A mirror found in a study or bedroom does the trick.

Additional Paddle Types (C-List)

Icy Paddle – This makes the Paddle move really slowly so that it needs to catch up to the player's finger. When the ball hits the Paddle, however, it becomes an ice ball and smashes through anything.

- This lasts for 6 seconds.
- A frosty potion does this to you.

Fan (Push Ball) – This power up allows the player to push the ball up without contacting the Paddle. It works like a fan blowing a ping-pong ball into the air.

- Lasts for 6 seconds.
- A Bellows found by a fireplace lets the user blow away.

Additional Ball Types (B-List)

Decoy / Fake Balls – This power down causes 2-12 Balls to be randomly generated from 2 Blocks below the real ball at random angles and speeds. They are decoys and simply pass through the Paddle. This results in the player likely losing track of the real ball...but she, paying

careful attention, can stay focused on the real ball. Could be a room of mirrors or simply a mirror or a flickering image of your ball.

Detonation Ball – (Tap to Explode) When this power up is caught the ball changes to a bomb that is detonated upon a tap in the in the control area. An area of 9x9 is cleared from the detonation site regardless of surrounding Blocks remaining hits. A scroll with a magic spell will allow you to cast this bomb.

Fire Ball – This power up causes Blocks that it touches to be lit on fire which damages them every 2 seconds until they burn out. Therefore, if a block has 4 hits remaining on it and is touched by a fire ball it will burn out in 8 seconds...additional hits will cause it 1 point of damage per hit assuming it is hit again while burning. Examples include torches, candles, candelabra and floating fiery potions.

Super Bouncy Ball – When this power up is gained the ball turns into a super ball. It immediately speeds up to maximum velocity and bounces at random angles from any impact point. A potion causes this to happen.

Double-Wide Ball – This power up changes the ball to supersize – double - its normal size making it easier to hit. It does double the hit damage on target Blocks. A transforming werewolf causes this to happen.

Warp Ball (Jumps Ahead) – A warp ball suddenly leaves the game area and reappears one second later in the field of play at a random angle. A magic portal icon gets you this result. A trap door icon.

Additional Ball Types (C-List)

Ice Ball – This ball causes Blocks to freeze and reduces their remaining hits to 1. If the remaining hits are 1 then the ice ball destroys the block. An icy breath icon reveals the ice ball – after all it's said to be extremely chilly around ghosts.

Additional Power-Up and Object Types (B-List)

Free Life – This power up gives the player a free Life.

Narrow / Widen Field – This power up works like the aforementioned Rails but is wider by 4 Blocks left and right of the Paddle. The banisters of steps, light beams, jousting sticks are possible looks of this power up.

Ball Splitter (Tiny Multi-Ball) – This power up causes the ball to be reduced in size by 50% and splits it into two Balls. It also reduces hit damage by 50%. An axe cause you to be split in half.

Swinging Arm / Rotating Blocks – This is an in game obstacle which creates a windmill on the mini golf course effect...blocking the progress of the ball at unwanted times. Swinging maces or swords.

Additional Power-Up and Object Types (C-List)

Mirror (Double Ball) – This spawns another ball one block to the right of the real ball and it mirrors the movement of the real ball. If spawning causes the ball to be located off the game board then it should be spawned to the left.

Portal (Transports Ball Across Screen) – The Ball enters one area of the screen and reappears at another at the same velocity and vector.

Possible Functionality

Cover-up Distractions (Clouds, Splats, Etc.) – Here we could utilize fog or darkness, for instance to obscure the game board and require the user to purchase or use a fog sucker or candle to clear the board.

Possible Extra Visuals

Ball hit Paddle effect – Each ball type causes a unique effect when hitting the Paddle.

Themed “Drops” – In any given Level, the Power-Ups, Drops and Blocks are themed according to the Level setting (Room).

- Perhaps we could use small items representing the level as those found in Shatter and suck them to the Paddle at the end of the level.

Door opens after destroying certain Blocks – This was demonstrated in the concept phase. Hitting a trap door X times causes it to open, letting in light and killing otherwise indestructible vampire Blocks.

Door opens after collecting certain drops or # of items – Same as the previous point except that the doorway is opened by collecting items and or points.

Paintings - Cute, creepy painting where the eyes follow the Ball.

Lightning striking causes a change to a painting – a cat sitting on a chair is then transformed to an arching cat for example.

Board Inversion / Board Flip – This possible mechanism changes the way you play the game possibly flipping the board on its head. This plays on the theme of horror where furniture is on the ceiling.

Additional Modes

Find Your Way Out Mode - In this mode a Player must strike a lever which opens or otherwise unlocks a secondary item on the Board (eg. a bookcase or a door opens). They must then strike the opened object with the Ball before it closes again either by the Level being hit again or by time running out (5 to 10 seconds).

Additional Rooms and Locations

Additional locations may also include:

- Laboratory
- Dining Room
- Bedrooms
- Attic
- Tower

- Weapon Room/Amory
- Ballroom
- Bathroom
- Room of Mirrors
- Garden
- Cemetery
- Swamp
- Gazebo
- Arboretum
- Forest/Creepy Path
- Cave
- Cellar
- Barn/Shed
- Deck/Window Balcony

Ranks

In the game, Trixie the Witch (i.e. the Player) will “level up” (or “Rank Up”) as indicated by the Witch’s Rank which is based on each pair of Stages in the game.

Each Rank will follow the pattern of one (+1) Rank achieved per two completed Stages which is visually indicated by each Floor in the Haunted Monster Mansion.

The Rank will be referred to as “Level X Witch” where “X” is the Level number. (For example, a “Level 4” witch will have earned Rank 4 and will be on the 4th Floor on the Map, meaning they have completed the two Stages on the Mansion’s 3rd Floor.)

The Witch’s Rank will be shown in the Map Screen.

Rank Gift / Grandma Gift

As the Player achieves each Rank, Grandmother Maxine gives Trixie one Power-Up as a Grandma Gift. This Grandma Gift will be one (1) Shield/Net Power-Up which be automatically put into the Player’s inventory and can be used at any time.

Witch Rank (Chart)

The chart below represents the Rank pattern:

- Rank 1 (“Level 1 Witch”) = Start the game on 1st Floor
- Rank 2 (“Level 2 Witch”) = Complete Stages 1 and 2 (on the 2nd Floor)
- Rank 3 (“Level 3 Witch”) = Complete Stages 3 and 4 (on the 3rd Floor)
- Rank 4 (“Level 4 Witch”) = Complete Stages 5 and 6 (on the 4th Floor)
- Rank 5 (“Level 5 Witch”) = Complete Stages 7 and 8 (on the 5th Floor)
- Rank 6 (“Level 6 Witch”) = Complete Stages 9 and 10 (on the 6th Floor)
- ...and so on for future Stages.

Additional Gift Items

- **Shield/"Net"** – A single Shield (a.k.a. Net) Power-Up can be gifted to or by each Facebook Friend once per day. Note that only one Shield is gifted per person. These are retained and remain in the Player's inventory until used.

Appendix I:

Tutorial Dialog & Level Objective Text

The chart below shows the text that will be used for the Tutorial Dialog popups as well as the Level Objective descriptions. Note that these are based on the [Game Levels](#) so, if those change, so should this text.

Tutorial Dialog Placement

Tutorial elements will be displayed by Ipswitch as a talking head with a speech bubble, just like the story elements. When the story and the tutorial come after each other, Ipswitch's Tutorial Dialog will follow the Story Dialog. (It is between "Play" and "Game Start" on the "[User Flow](#)" [Chart](#)).

Level Objective Text Placement

Level Objective Dialog will be displayed in the Level Objective area (as shown on the "[User Flow](#)" [Chart](#)).

Please Note: In dialog, please always use the following terms:

- The Paddle should be referred to as a "Wand."
- Blocks are referred to as "Bricks" (as long as the full title of the game includes "The Magical Brick Breaking Game").

Tutorial Dialog & Level Objective Text (Chart)

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 1: Wine Cellar	1	[SHOW CHAIN BLOCK] Most bricks simply break with one hit but some bricks will cause CHAIN REACTIONS and destroy several bricks!	Clear all the Bricks with only X Balls!
	2	[SHOW SHIELD BOARD POWER-UP] Catch the WEB SHIELD power-up and the ball will bounce back into play even if you miss it - but only three times!	Clear all the Bricks with only X Balls!
	3		Clear the Bricks in less than XX seconds!
	4		Clear the Bricks in less than XX seconds!
	5	[SHOW MULTI-BALL POWER-UP] Catch the MULTI-BALL power-up and watch one ball magically become six!	Hit the small Targets first, then Hit the Large Target to win!
	6		Hit the small Targets first, then Hit the Large Target to win!
	7		Clear all the Bricks with only X Balls!
	8		Clear all the Bricks with only X Balls!
	9	[(SHOWS ROCKET PADDLE POWER-UP) Catch the MAGIC BLAST power-up to shoot brick-blasting magic from your wand for 6 seconds!	Clear all the Bricks with only X Balls!
	10		Clear the Bricks in less than XX seconds!
	11		Hit the small Targets first, then Hit the Large Target to win!
	12		Clear the Bricks in less than XX seconds!
	13	[SHOW A CAULDRON BLOCK] Hit the CAULDRON twice: Once to crack it and a second time to boil it over. KA-BOOM!	Clear all the Bricks with only X Balls!
	14		Clear all the Bricks with only X Balls!
	15		Hit the small Targets first, then Hit the Large Target in less than XX second to win!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 2: Dungeon	16	[SHOW UNBREAKABLE BLOCK] Some bricks cannot be easily destroyed. Acid and explosions, however, will do the trick.	Clear all the Bricks with only X Balls!
	17	[SHOW GRAND FINALE BLOCK] Hit the GRAND FINALE BRICK to magically break everything on the board!	Clear the Bricks in less than XX seconds!
	18	[SHOW STICKY PADDLE POWER-UP] Catch the STICKY WAND power-up to grab the ball with your wand. Tap the screen to release it again.	Clear all the Bricks with only X Balls!
	19		Clear all the Bricks with only X Balls!
	20		Hit the small Targets first, then Hit the Large Target to win!
	21	[SHOW BOMB BLOCK] Hit a BOMB SACK for magically explosive brick-breaking action!	Clear all the Bricks with only X Balls!
	22		Clear the Bricks in less than XX seconds!
	23		Clear all the Bricks with only X Balls!
	24	[SHOW RESIZE PADDLE POWER-UP] Catch a RESIZE power-up to make your wand bigger or smaller!	Clear all the Bricks with only X Balls!
	25		Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!
	26		Clear all the Bricks with only X Balls!
	27	[SHOW A STRONG BLOCK] The GARGOYLES can be destroyed. They simply require a lot of hits.	Clear all the Bricks with only X Balls!
	28		Clear the Bricks in less than XX seconds!
	29		Clear the Bricks in less than XX seconds!
	30		Hit the small Targets first, then Hit the Large Target to win!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 3: Laundry Room (A)	31	[SHOW GHOST VIAL BRICK] Oh, no! Some of the bricks are under a LOCOMOTION SPELL! Hit them if you can!	Clear all the Bricks with only X Balls!
	32		Clear the Bricks in less than XX seconds!
	33		Clear all the Bricks with only X Balls!
	34	[SHOW BUMPER BLOCK] Hit the BUMPERS for extra bounce and extra points!	Clear all the Bricks with only X Balls!
	35		Clear the Bricks in less than XX seconds!
	36		
	37		Hit the small Targets first, then Hit the Large Target to win!
	38	[SHOW ACID BALL] The ACID BALL will eat through even the toughest bricks!	Clear all the Bricks with only X Balls!
	39		Clear all the Bricks with only X Balls!
	40		Clear all the Bricks with only X Balls!
	41		Clear the Bricks in less than XX seconds!
	42	[SHOW ELECTIC SHOCK PADDLE POWER-UP] Catch the ELECTRIC WAND power-up to shoot brick-breaking lightning from your wand!	Clear all the Bricks with only X Balls!
	43		Hit the small Targets first, then Hit the Large Target to win!
	44		Clear all the Bricks with only X Balls!
	45	[SHOW SUPERNOVA POWER-UP] Catch the SUPERNOVA power-up to cast the ultimate brick-clearing spell!	Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 4: Laundry Room (B)	46		Clear all the Bricks with only X Balls!
	47		Clear the Bricks in less than XX seconds!
	48	[SHOW LIFE AND DEATH POWER-UPS] Catch a LIFE POWER-UP to get an EXTRA BALL. Catch DEATH, however, and you'll immediately lose the ball.	Clear all the Bricks with only X Balls!
	49		Clear the Bricks in less than XX seconds!
	50		Clear all the Bricks with only X Balls!
	51		Clear all the Bricks with only X Balls!
	52	[SHOW REVERSE/INVERSE PADDLE POWER-DOWN] Catch the REVERSE power-down and your controls will invert for 6 seconds. Left becomes right!	Hit the small Targets first, then Hit the Large Target to win!
	53		Clear all the Bricks with only X Balls!
	54		Clear the Bricks in less than XX seconds!
	55		Clear the Bricks in less than XX seconds!
	56		Clear all the Bricks with only X Balls!
	57		Clear the Bricks in less than XX seconds!
	58		Clear all the Bricks with only X Balls!
	59		Hit the small Targets first, then Hit the Large Target to win!
	60		Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 5: Foyer (A)	61	[SHOW CROSS BLOCK] Hit the CROSS BRICK to blast all the bricks in the rows above, below and next to it.	Clear all the Bricks with only X Balls!
	62		Clear the Bricks in less than XX seconds!
	63		Earn enough points to go Supernova and instantly clear all the Bricks!
	64		Clear all the Bricks with only X Balls!
	65		Clear all the Bricks with only X Balls!
	66		Clear the Bricks in less than XX seconds!
	67		Clear all the Bricks with only X Balls!
	68		Clear all the Bricks with only X Balls!
	69		Hit the small Targets first, then Hit the Large Target to win!
	70		Clear the Bricks in less than XX seconds!
	71		Clear all the Bricks with only X Balls!
	72		Clear the Bricks in less than XX seconds!
	73		Clear all the Bricks with only X Balls!
	74		Clear the Bricks in less than XX seconds!
	75		Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 6: Foyer (B)	76		Clear the Bricks in less than XX seconds!
	77		Clear all the Bricks with only X Balls!
	78		Earn enough points to go Supernova and instantly clear all the Bricks!
	79		Clear all the Bricks with only X Balls!
	80		Clear the Bricks in less than XX seconds!
	81		Clear all the Bricks with only X Balls!
	82	[SHOW TIME-WARP POWER-UP] Catch the TIME WARP power-up and the ball will slow down when it gets close to the wand!	Hit the small Targets first, then Hit the Large Target to win!
	83		Clear all the Bricks with only X Balls!
	84		Hit the small Targets first, then Hit the Large Target to win!
	85		Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!
	86		Clear all the Bricks with only X Balls!
	87		Clear the Bricks in less than XX seconds!
	88		Clear all the Bricks with only X Balls!
	89		Clear all the Bricks with only X Balls!
	90		Earn enough points to go Supernova and instantly clear all the Bricks!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 7: Front Den (A)	91	[SHOW GRENADE BALL] Catch the GRENADE and anything the ball hits will explode! KA-BLAM!	Clear all the Bricks with only X Balls!
	92		Clear the Bricks in less than XX seconds!
	93		Clear all the Bricks with only X Balls!
	94		Clear the Bricks in less than XX seconds!
	95		Clear all the Bricks with only X Balls!
	96		Hit the small Targets first, then Hit the Large Target to win!
	97		Earn enough points to go Supernova and instantly clear all the Bricks!
	98		Clear the Bricks in less than XX seconds!
	99		Clear all the Bricks with only X Balls!
	100		Clear all the Bricks with only X Balls!
	101		Earn enough points to go Supernova and instantly clear all the Bricks!
	102	[SHOW SPEED UP POWER-UP AND SPEED DOWN POWER-DOWN] Watch out! Catch these and your ball will speed up or slow down for a few seconds!	Clear the Bricks in less than XX seconds!
	103		Clear all the Bricks with only X Balls!
	104		Hit the small Targets first, then Hit the Large Target to win!
	105		Clear all the Bricks with only X Balls!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 8: Front Den (B)	106		Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!
	107		Clear all the Bricks with only X Balls!
	108		Clear the Bricks in less than XX seconds!
	109		Clear all the Bricks with only X Balls!
	110	[SHOWS MAGNETIC PADDLE POWER-UP] Catch the MAGNET and every loose object - good or bad - will fly towards your wand! It's truly magical!	Hit the small Targets first, then Hit the Large Target to win!
	111		Clear all the Bricks with only X Balls!
	112		Clear the Bricks in less than XX seconds!
	113		Clear all the Bricks with only X Balls!
	114		Earn enough points to go Supernova and instantly clear all the Bricks!
	115		Clear all the Bricks with only X Balls!
	116		Clear all the Bricks with only X Balls!
	117		Clear the Bricks in less than XX seconds!
	118		Clear all the Bricks with only X Balls!
	119		Clear the Bricks in less than XX seconds!
	120		Hit the small Targets first, then Hit the Large Target to win!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 9: Library	121	[SHOW INVISIBLE GHOST BRICK] Watch out for invisible GHOST BRICKS! They become more visible each time a ball passes through them.	Clear all the Bricks with only X Balls!
	122		Clear the Bricks in less than XX seconds!
	123		Hit the small Targets first, then Hit the Large Target to win!
	124		Clear all the Bricks with only X Balls!
	125		Clear all the Bricks with only X Balls!
	126	[SHOW FLICKER BALL POWER-UP] Catch the FLICKER-BALL power-down and the ball will flicker as it flies!	Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!
	127		Hit the small Targets first, then Hit the Large Target to win!
	128		Earn enough points to go Supernova and instantly clear all the Bricks!
	129		Clear all the Bricks with only X Balls!
	130		Hit the small Targets first, then Hit the Large Target to win!
	131		Clear all the Bricks with only X Balls!
	132		Earn enough points to go Supernova and instantly clear all the Bricks!
	133		Clear all the Bricks with only X Balls!
	134		Clear the Bricks in less than XX seconds!
	135		Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 10: Kitchen	136		Earn enough points to go Supernova and instantly clear all the Bricks!
	137		Clear all the Bricks with only X Balls!
	138		Clear all the Bricks with only X Balls!
	139		Clear the Bricks in less than XX seconds!
	140	[SHOW REMOTE CONTROL PADDLE POWER-UP] Catch the REMOTE CONTROL power-up and you can control the ball as it moves!	Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!
	141		Hit the small Targets first, then Hit the Large Target to win!
	142		Clear all the Bricks with only X Balls!
	143		Clear all the Bricks with only X Balls!
	144		Hit the small Targets first, then Hit the Large Target to win!
	145		Clear the Bricks in less than XX seconds!
	146		Clear all the Bricks with only X Balls!
	147		Earn enough points to go Supernova and instantly clear all the Bricks!
	148		Clear all the Bricks with only X Balls!
	149		Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!
	150		Clear the Bricks in less than XX seconds!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 11: Observatory A	151		Clear all the Bricks with only X Balls!
	152		Clear all the Bricks with only X Balls!
	153		Clear the Bricks in less than XX seconds!
	154		Earn enough points to go Supernova and instantly clear all the Bricks!
	155		Clear all the Bricks with only X Balls!
	156		Hit the small Targets first, then Hit the Large Target to win!
	157		Clear all the Bricks with only X Balls!
	158		Clear the Bricks in less than XX seconds!
	159		Clear all the Bricks with only X Balls!
	160		Hit the small Targets first, then Hit the Large Target to win!
	161		Earn enough points to go Supernova and instantly clear all the Bricks!
	162		Clear all the Bricks with only X Balls!
	163		Clear the Bricks in less than XX seconds!
	164		Clear all the Bricks with only X Balls!
	165		Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!

STAGE	LEVEL	TUTORIAL TEXT	LEVEL OBJECTIVE TEXT
Stage 11: Observatory B	166		Clear the Bricks in less than XX seconds!
	167		Clear all the Bricks with only X Balls!
	168		Earn enough points to go Supernova and instantly clear all the Bricks!
	169		Hit the small Targets first, then Hit the Large Target to win!
	170		Clear the Bricks in less than XX seconds!
	171		Clear all the Bricks with only X Balls!
	172		Clear the Bricks in less than XX seconds!
	173		Clear all the Bricks with only X Balls!
	174		Clear the Bricks in less than XX seconds!
	175		Earn enough points to go Supernova and instantly clear all the Bricks!
	176		Hit the small Targets first, then Hit the Large Target to win!
	177		Clear all the Bricks with only X Balls!
	178		Clear all the Bricks with only X Balls!
	179		Clear the Bricks in less than XX seconds!
	180		Hit the small Targets first, then Hit the Large Target in less than XX seconds to win!