ASIA PACIFIC BLOCKCHAIN SUMMIT

BIGBANG GAMES CREATION MEETING

亞太區塊鏈應用高峰論壇 · BIGBANG GAMES創世見面會 · 新加坡

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Introduction

- Professor Graham Leach
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Big Bang Survival Run

A GREAT GAME IDEA WITH A PRETTY SHOWREEL AND A GOOD HOOK

...AND ALSO (I THINK) A BIG CHALLENGE!

The Big Challenge is Trust

WITHOUT A WAY TO SOMEHOW DEVELOP PLAYER TRUST

THE GAME WILL FACE SIGNIFICANT ADOPTION CHALLENGES

Enter the PFG Framework

Provably Fair Games (PFG)

Are composed of at least the following:

- Truly Random Numbers
- Cryptography
- Blockchain

I Wrote a Paper About It

How Truly Random Numbers, Cryptography and Blockchain Increased Trust In iGaming

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Abstract

Games come in three flavors; Chance, Skill and Both. Games of Chance outcomes are driven by randomness. Games of Skill outcomes are driven by Player choice. Game of Both outcomes are driven by a mix of both Chance and Skill. Distrust overshadow iGaming because Players often suspect that Operators are rigging their games by subverting the randomness that helps to drive game results. True Random Number Generators, Cryptography, and Blockchain can be used to mitigate this situation by enabling Operators to pre-publish random number inputs prior to a game turn, in such a way that Players cannot defraud the Operators by using that information to influence their gaming strategies. In this paper, we examine The BigBang Survival Run, an online variant of a parimutuel Game of Chance, where the above approach has been implemented.

THE PFG FRAMEWORK CAN HELP TO DEVELOP PLAYER TRUST

The Paper Proposed An Approach

XI. A POSSIBLE TECHNOLOGICAL RESOLUTION TO MUTUAL DISTRUST.

iGaming Operators have started to address Player mistrust by developing systems that integrate True Random Number Generators, Cryptography and Blockchain. In an ideal scenario, an iGaming operator would generate a random number using a True Random Number Generator, digitally sign it using PKI and then commit that result to a blockchain before any Game of Chance or Game of Both play begins. Any Player harboring a suspicion that the Operator had somehow subverted the game could choose to verify the random number input used by accessing a public, persistent, immutable, time-stamped transaction on the blockchain that contains the digitally signed random number that was used to determine the actual game outcome.

XII. APPLICATION: THE BIGBANG SURVIVAL RUN

The BigBang Survival Run is a variant of a *parimutuel game*, in which an arbitrary number of participants place a wager on a random event. In the case of BigBang Survival Run, a rocket ship traveling in space explodes once it has run out of fuel, but the amount of remaining fuel is indeterminate, making the time of the explosion impossible to predict. When the ship explodes, any passengers remaining onboard are instantly killed. Those passengers who abandon ship early receive a modest return. Those passengers who remained onboard for a longer period of time, but still managed to abandon ship before it exploded receive a more generous return.

USE THE BLOCKCHAIN TO STORE THE ENCRYPTED
(BUT DIGITALLY SIGNED) RANDOM NUMBERS
USED TO DRIVE GAME OUTCOMES

A Good Start

XIII. BLOCKCHAIN-BASED TRANSACTIONS

Data concerning every turn of The BigBang Survival Run is recorded as a transaction on a blockchain to facilitate verification. The address for an example transaction appears below:

0xeaedec663efe5bd73778cc5e1c944afb78b8a3b9f38e66f5f918f90200032c60

Figure 2: Example BigBang Survival Run Blockchain Transaction Address

THE RESULTS OF EVERY BIG BANG SURVIVAL RUN GAME
ARE SAVED AS A TRANSACTION ON A BLOCKCHAIN
THE NEXT STEP IS TO STORE THE INPUTS
IN ADVANCE OF GAME PLAY

Because Validation Creates Trust

THE BBSR RESULT BROWSER MECHANISM
IS A PRECURSORTO A FULLY-BLOWN PFG SYSTEM.
IF BBGC IMPLEMENTS PFG, PLAYER TRUST WILL COME!

THANK YOU!

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