The Acebusters Economy

Democratized online poker

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Introduction

Poker is a great game of skill that teaches players how to boldly take opportunities and avoid excessive risk. These skills are transferable to our lives when dealing with uncertainty and future risk.

Unfortunately, the online poker industry has turned into a monopoly which has locked players in and now starts to raise the fees [1)]. This has led to a general decline of online poker over the last years.

We created Acebusters to break up this monopoly and disrupt the online poker market. We want to democratize online poker and give it back to the players.

[1)] https://www.onlinepokerreport.com/20135/pokerstars-rake-hike-impacts-and-analysis/

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What is Acebusters?

Acebusters is a project, started and developed by individuals that are obsessive poker and cryptography fans. We strive to create Acebusters as a Decentralized Autonomous Organization. It will offer the service of dealing cards and settling bets, removing the banking and dealer counterparties, which centralized online poker relies on today.

We will use cryptoeconomics together with the latest advances in cryptography to minimize cheating and guarantee a fair game.

The Acebusters Manifesto

We collaborate without hierarchy, only driven by our passion, to create a global network for playing poker online. Our manifesto is:

active users and working solutions	over	total decentralization
user security and fair games	over	success of the network
responding to change	over	following a plan
thorough execution	over	explosive growth

That is, while there is value in the items on the right, we value the items on the left more.

Components

Acebusters consists of the following components:

- a collection of smart contracts we call “the economy”
- implementation of poker tables as smart contracts
- identity and reputation system
- mental poker protocol

In this document the economy and its governance will be introduced. The poker tables received a separate technical whitepaper [1)]. The identity system and the mental poker protocol are not completed yet and will be released when achieving maturity.

[1)] http://www.acebusters.com/multi-party-state-channelsv1.0.pdf

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Nutz Contract

The Nutz contract is the issuer of the NTZ token and entry-gate to the Acebusters economy. NTZ are uncapped in supply and can be purchased with Ether and converted back at any time.

Holding NTZ in a wallet gives players the ability to join tables. When joining, NTZ are transferred into a blockchain payment channel, in which multiple players can exchange bets in real time. The payment channel holds all funds securely until players leave the table, at which time NTZ are transferred back directly into the player's wallet.

The contract's token supply can be categorized as follows:

Active Supply: the sum of all NTZ held on the accounts of users.

Power Pool: an account controlled by the Power contract that holds all NTZ that have been converted to ABP. Details about this can be found in the "Power Contract" section.

Burn Pool: an account on which NTZ can be permanently immobilized. The section "Power Events" will describe the use of this account in detail.

Total Supply: the sum of Active Supply, Power Pool and Burn Pool.

The NTZ token has 12 decimals and its subunits break down like this:

- 10^{12} - Nutz (NTZ)
- 10^{9} - Joz
- 10^{6} - Helcz
- 10^{3} - Pascalz
- 10^{0} - Babz

Market Maker

The Nutz contract implements a **purchase price** at which the token can be bought from the contract and a **sale price** at which the token can be sold to the contract at any time. This concept is borrowed from Vlad Zamfir's Safe Token Sale Mechanisms [1)].

Price Notation

Even though the purchase price is technically a smaller number than the sale price when both are given in the unit of payment, we choose to display both numbers as NTZ in relation to 1 ETH.

[1)] https://medium.com/@Vlad_Zamfir/a-safe-token-sale-mechanism-8d73c430ddd1

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Example:

- If the purchase price is 0.25 ETH you will receive 4 NTZ for sending 1 ETH, hence we write 4 NTZ.
- If the sale price is 5 NTZ you will receive 1 ETH for sending them. Hence we write 5 NTZ.

This way the purchase and sale prices can be put into better relation and a spread can deducted easily.

Configuration Options

3 different configurations of the market maker can be distinguished:

Purchase price == sale price
At this configuration users can get in and out of the economy at no cost.

Purchase price == 0 && sale price == infinity
The Nutz contract can disable the purchase by setting the purchase price to 0. The contract will return the ETH to the sender in that case.
The contract can also disable the sale by setting the sale price to infinity.

Purchase and sale price at a specific spread
By setting the purchase price and sale price to a specific spread, the contract acts as buyer and seller of last resort, when certain price levels are reached.
If a secondary market would trade above the purchase price, there would be an opportunity to purchase Nutz at the contract and sell at profit to the market.
If a secondary market would trade below the sale price, there would also be an opportunity to buy cheaper token at the market and sell them to the contract at a profit, until the price at the secondary market approaches sale price.

With this functionality the contract can guarantee liquidity to players at any time and protect them from the volatility that speculators seek to create.

The determination of the prices is not arbitrary but happens through democratic principles. The section “Initial Governance” will describe details.

Transparent Reserve

The ETH that the contract receives for purchases of NTZ will remain in the contract and can be audited in real time.

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At any time, the contract enforces a required reserve that allows all the NTZ tokens in Active Supply to be sold at sale price. This gives security to users and avoids a “bank run” on the contract.
Note that the calculation of required reserve does not include the Burn Pool, as tokens on this account are immobilized, and hence, can not be sold.
The difference between total reserve and required reserve will be used by the economy to fund growth goals. The section “Power Events” will describe growth goals in detail.

Power Contract

The Power contract is the issuer of the Acebusters Power (ABP) token. The supply of ABP is fixed and can be categorized as follows:

Outstanding ABP: the sum of all ABP held on the accounts of users.

Issued ABP: the total amount of ABP available for powerUp. When outstanding ABP has reached this amount, no further powerUps can be executed until new powerDown are initiated.

Authorized ABP: the total amount of ABP available. This number measures the size of the economy and can be used to calculate an account’s share of the total economy by dividing the accounts ABP balance by Authorized ABP.

NTZ can be converted to ABP through a process called **powerUp** and converted back to NTZ through **powerDown**. While the powerUp is instant, a powerDown is split over multiple payouts and a period of 3 months.

When powering up, the user’s NTZ are transferred to the Power Pool, in exchange the user receives an ABP balance in the Power contract. When powering down, an amount of ABP is converted from outstanding to issued and a corresponding amount of NTZ is added to the user’s wallet.

ABP is not transferable and represent a bond to the network and voting rights (see section voting rights) within the economy. The bond can serve as access right to trusted tables and can be slashed, if a player is found cheating or colluding.

Roles

Fish Account:

- limited to purchase and sell (only ETH, NTZ)
- account limited to ~USD 50
- access to untrusted tables

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- gas is payed for by economy
- can be upgraded to shark account

Shark Account:

- no account limits
- access to purchase, sell (ETH, NTZ)
- access powerUp and powerDown (ABP) => ABP holder
- gas paid from own wallet (Metamask / Mist)

ABP Holder:

- access to trusted tables
- receives reward for rake created by referred users
- can vote on changes to the parameters of the economy (sale price / purchase price / percentage of rake)
- power can be slashed when found cheating or colluding

Cryptoeconomic Incentives

In a pseudonymous environment like the blockchain, traditional methods of preventing fraud like real world identities or blocking suspicious accounts are not feasible.
To be able to operate in such an environment, we make use of cryptoeconomics, a design principle that combines cryptography and game theory to create systems that exhibiting some set of economic dis/incentives.

The following building blocks have been put in place:

- **Identity and reputation:** During signup users create a public/private key pair in their browser as well as an identity contract on the blockchain. Using these keys users sign receipts for commitments during gameplay which are publicly available and can be analysed for cheating and collusion. Using their identity contract, users can give and receive attestations, earning them a track record for fair play over time.

- **Security deposits:** ABP acts as a bond from the player to the network, because it is time-locked and not transferable. ABP can be slashed if a player is found cheating.

- **Limited access:** Tables with high profitability require players to have higher holdings of ABP and longer track records of reputation to be able to join them.

With these building blocks available, we are evaluating different configurations to be able to offer the most secure and enjoyable gameplay.

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Initial Governance

Not all needed functions for the economy can be decentralized from the beginning on. A simple governance model is put in place as follows:

Executive Board: the executive board is a group of 2 individuals acting through a multi-signature contract.

- operate tables (open / close / rake)
- organize tournaments
- organize votes
- redistribute earned rake to ABP holders
- emergency hold economy on suspicious events
- evaluate fraud reports, create slashing proposals

Governing Council: A group of 4 individuals chosen to represent the interests of the ABP holders and players.

- commission votes and obey majority outcomes
- move purchase price and sale price
- execute slashing on cheating players
- continue economy after emergency hold and resolution of issue
- burning of NTZ to dilute ABP (see Power Events section for explanation of burn)

Voting Rights

Power holders can cast ballots on votes with the weight of their ABP balance. As ABP is not transferable, and locked for a period of time, the votes can simply be summed up in the ballot box contract. As voting is complex, this subject will receive a separate discussion in another paper.

Smart Policies

While the Governance Council will hold all admin rights on the Nutz contract at the beginning, it has the ability to delegate these rights to smart contracts. We call these contracts that receive rights to modify economic parameters Smart Policies.

A simple example of such a Smart Policy can be a timer that would move the purchase price up or down if a specific date has passed. Anyone, not only the Governance Council, can trigger this contract to have it perform its task, as long as the condition is met. In essence Smart Policies restrict the access scope to the admin role and attach further conditions.

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In an ideal scenario, the Executive Board proposes Smart Policies, which are potentially enacted through majority vote by ABP holders. Active policies can remain for a certain period and then revoke their own access once their task is completed.

We strive to transition from the initial state, where the Governance Council will execute most changes manually to a situation where more and more actions are done by Smart Policies, while the Governing Council monitors execution. Eventually, the Governing Council will revoke its own access rights and leave the future success of the network to the decisions of the ABP holders.

Power Events

To set goals and achieve new milestones, the network can initiate Power Events. In a Power Event new ABP is authorized and opened up to existing and new holders. As NTZ are purchased for later powerUp, more ETH is deposited in the reserve of the Nutz contract. The new reserve balance can then be utilized for the determined goals.

When new ABP is authorized, existing ABP holders will be diluted and their drawing right on the Power Pool shrink. To prevent dead supply in the Power Pool, an amount of NTZ equivalent to the newly issued ABP is issued in the NTZ contract and immediately deposited into the Burn Pool. The “burn” does not affect existing NTZ holders’ claim on the reserve, as it is not part of the Active Supply.

Whenever new ABP is authorized, existing holders have a preemption right to powerUp, before new holders can do so.

A Power Event has the following steps:

1. A proposal is created by the Executive Board consisting of:
    - growth goal
    - break down of goal into milestones
    - minimum amount of new ETH to collect in reserve
2. The proposal is voted on by ABP holders.
3. The Governing Council makes a public announcement consisting of:
    - growth goal
    - discount rate
    - end date
    - maximum amount of new ETH to collect in reserve
    - amount of new ABP to be issued in Power Event
4. Power Event contributors purchase NTZ, increasing the reserve.

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5. Governing Council increases the purchase price by discount rate when either is reached:
    - maximum amount
    - minimum amount and end date
6. The Governing Council dilutes current ABP holders by amount of new ABP
7. Current ABP holders powerUp, if they want to keep their previous share of the economy.
8. If existing ABP holders don't make use of their right, lastly powerUp is opened to potential new ABP holders.
9. After achievement of milestones, the Governing Council allocates ETH from the reserve to the account of the Executive Board to be used on the execution of the next milestone.

The Power Event can be canceled if the minimum amount of ETH is not raised before the end date. In this situation, the process takes the following steps:

1. A proposal is created by the Executive Board.
2. The proposal is voted on by ABP holders.
3. The Governing Council makes a public announcement.
4. Power Event contributors purchase NTZ, increasing the reserve.
5. The end date is reached and minimum amount has not been reached. The Governing Council increases the floor price to equal sale price.
6. Previous Power Event contributors can sell their NTZ at the same price as they purchased, tacking no loss.

Power Events will be implemented as Smart Policies. By this, all steps and conditions of the event will be transparent and guaranteed to participants.

Conclusion

This document aggregates our current best technical knowledge and market understanding. If you like our cause, the creation a global, decentralized poker network, join us now:

Email:	info@acebusters.com
Homepage:	www.acebusters.com
Discord:	https://discordapp.com/invite/7PesDTZ
Code:	https://github.com/acebusters/economy

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