



AUGMENTORS

DATABITS
ECONOMY
DESIGN 2.0

DATABITS ECONOMY DESIGN V2.0

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CONTENTS

1	Introduction	3
2	Initial token economy	3
2.1	Supply of Databits	3
2.2	Prior Databit token economy explanation	3
2.3	Advantages of initial system	4
2.4	Disadvantages of initial system	4
3	New token economy design	5
3.1	Economy design	5
3.2	Economy design elements	7
3.3	Economy design advantages	7
4	Conclusion	9

LIST OF FIGURES

Figure 1	Initial Databit token economy design	3
Figure 2	Diagram of new token economy	6
Figure 3	\$DTB Feedback loop	8

LIST OF TABLES

Table 1	Average \$DTB price vs. different possible lifetime revenues of the game	4
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ABSTRACT

The primary aim of this new design is to align the interest of the Augmentors business, the backers, the players and all other participants in the network. The system uses Databits (\$DTB) and the in-game currency, which is referred to as Databit Tethers (\$DTBT) in this document. \$DTBT are locked to \$DTB at a fixed ratio and can be traded into and out of \$DTB. In this new system, Augmentors derives its revenue from the selling of packs containing creatures and other consumable items. These packs will also contain some \$DTBT and will be available through the in-game store. \$DTBT are used in the internal virtual economy (which is powered by \$DTBT) and in this economy, players will require \$DTBT to utilise different game features. This means that the Augmentors business is highly incentivized to stabilise and grow the value of the network and \$DTB.

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1 INTRODUCTION

Databits (\$DTB) are an integral part of the Augmentors gaming ecosystem and have influenced the design of the game, allowing for its financing. In order to issue and release \$DTB initially, a preliminary token system was designed. Now, we believe that the preliminary token system is suboptimal.

Firstly, this paper reviews the initial token system, its advantages, and its disadvantages. Secondly, this paper discusses a proposed new token system and how this new system solves the fundamental issues with the old token system. The author believes that the new token economy design fosters an economy that will serve both the players and the backers of the game, creating a network of symbiotic positive network effects which fully utilises the power of crypto-tokens.

The primary aim of this new design is to align the interest of the Augmentors business, the backers, the players and all other participants in the network. The system uses \$DTB and the in-game currency, which is referred to as Databit Tethers (\$DTBT). \$DTBT are locked to \$DTB at a fixed ratio and can be traded into and out of \$DTB. In this new system, Augmentors derives its revenue from the selling of packs containing creatures and other consumable items. These packs will also contain some \$DTBT and will be available through the in-game store. \$DTBT are used in the internal virtual economy (which is powered by \$DTBT) and in this economy, players will require \$DTBT to utilise different game features. This means that the Augmentors business is highly incentivized to stabilise and grow the value of the network and \$DTB.

2 INITIAL TOKEN ECONOMY

2.1 Supply of Databits

To start with, 100,000,000 tokens were created. The token sale structure allocated 70,000,000 of the tokens to the token sale and the remaining 30,000,000 to the Augmentors company. Although, the \$1 million USD token sale target was reached, not all 70 million \$DTB were sold during the sale; 15,923,466 \$DTB were sold. At the request of the community, the company agreed to reduce its stake from 30,000,000 \$DTB to 30% of the total supply and thus, now, the company owns 6,824,342 \$DTB, with the community holding the remaining 15,923,466 \$DTB.

2.2 Prior Databit token economy explanation

All in-app purchases are in fiat i.e. US Dollars (\$ USD). For every \$10 USD spent in-game, Augmentors receives \$7 USD – after Apple's 30% fee. Of this \$7 USD, \$3.5 USD is reflected as Augmentors revenue and the other \$3.5 USD is used to purchase \$DTB at the instantaneous market price. The purchased \$DTB is then destroyed. After the destruction of \$DTB, the item (a creature or relic) is sent to the purchaser. This structure provides liquidity in the secondary market and shrinks the supply of \$DTB, which should cause an increase in their value. Figure 1 illustrates this process graphically.



Figure 1: Initial Databit token economy design

Table 1: Shows the average \$DTB price vs. different possible lifetime revenues of the game. The higher the lifetime revenue, the higher the expected average price of \$DTB. Note, this assumes all \$DTB are sold for the same price, which will not happen. It is illustrative of the fundamental value only.

Possible Lifetime Revenue	Total \$ of purchased \$DTB	Starting \$DTB in circulation	Average \$DTB Price
\$1,000,000	\$350,000	22,747,808	\$0.02
\$10,000,000	\$3,500,000		\$0.15
\$20,000,000	\$7,000,000		\$0.31
\$50,000,000	\$17,500,000		\$0.77
\$100,000,000	\$35,000,000		\$1.54
\$1,000,000,000	\$350,000,000		\$15.39

2.3 Advantages of initial system

The advantages of this system are described below.

2.3.1 Established use case

In the current system, there is an established use case for tokens as a portion of the game's revenue will purchase \$DTB from the secondary market, which is then destroyed. Thus, the price of \$DTB is influenced by the revenue of the game. This gives \$DTB an intrinsic value.

Table 1 shows how the price of \$DTB is linked to the lifetime revenue of the game. The table shows different possible lifetime revenues, and one can see that as the lifetime revenue increases then so does the \$DTB price. This table does not take into account any speculative holding of \$DTB, which may drive instantaneous prices up.

2.3.2 Guaranteed liquidity

The market has guaranteed liquidity as the company becomes a market maker, who is continually purchasing \$DTBs at prevailing rates.

2.4 Disadvantages of initial system

The initial system has a number of disadvantages, which prevent \$DTB from being suitable as an in-game token. These prevent the token from having a number of key features, which are enabled by a correctly designed system. An example issue is the deflationary nature of the coin, which prevents it being a suitable in-game token. However, this paper focuses on the only disadvantage that is fatal. For completeness sake, the other disadvantages include:

- Deflationary nature causes a reduction in spending
- Fluctuating price based on speculation of game's profits
- Misalignment of incentives between backers, company and players
- No network effects
- Minimal utility

2.4.1 Regulatory

The regulatory space has changed since the design of the initial system and it is becoming increasingly clear that tokens that share profits (either directly, or through a burning mechanism) are seen as securities by the U.S. Securities and Exchange Commission (SEC). This was announced when the SEC released their report¹ regarding the now failed Decentralized Autonomous Organization (DAO). This report indicated that profit-sharing tokens are considered securities. As such, the current token design falls outside of the acceptable legal use of tokens. Since the SEC announcement, at least four other agencies have released statements (FINMA, ASIC, PBoC, FSS) with more agencies releasing statements each day. The statements have all been different,

¹ <https://www.sec.gov/litigation/investreport/34-81207.pdf>

some have been formal warnings, while some have been more serious in nature.

As this is a nascent market with significant legal and regulatory risks, the final token design should mitigate risk and follow best practice. The regulatory risk has given us no choice but to redesign the token economy.

3 NEW TOKEN ECONOMY DESIGN

We believe that we have found the solution to the regulatory issue with our new token system: it is now clearly a utility token. Also, we believe that the updated system has a number of additional benefits when compared to the old system. On a high level, the new system allows \$DTB to be related to the in-game economy i.e. the value of token is reflected in the size of the in-game economy as the monetary supply is fixed. We believe this is a critical difference which has a number of benefits when compared to the old system.

The new system was designed using the philosophy of a utility token. Current best practice for a utility token is based on the equation of exchange². In the crypto-industry, this is best described by Chris Burniske's post³. An extract is shown below:

"A cryptoasset valuation is largely comprised of solving for M, where $M = PQ/V$. M is the size of the monetary base necessary to support a cryptoeconomy of size PQ, at velocity V." - Chris Burniske

Thus, in order for \$DTB to be a utility token it should be directly linked to a crypto-economy. In turn, this crypto-economy should be related to the game economy. We believe the new token system meets these requirements.

The initial system failed to link the token to the value of the cryptoeconomy, rather it was a profit share model. This meant that the token is weakly linked to the size of the economy, and does not encourage its growth, which is suboptimal.

3.1 Economy design

A diagram (Figure 2) of the high-level system is shown below. Importantly, there are two tokens. Databits (\$DTB) and a Databits Tether (\$DTBT). \$DTB is the standard crypto-asset and \$DTBT is an off-chain asset that is pegged to \$DTB. For every 1 \$DTB, there will be 1000 \$DTBT.

Firstly, a player purchases a package using fiat currency from the in-app store. This is accomplished through the in-app purchase functionality, which is the standard method of in-app purchases. The app store fee, typically 30%, is subtracted from the payment and the balance is sent to the in-app store.

Each purchased package contains several elements including, but not limited to, creatures, consumables and \$DTBT. Once purchased, the company sends the proportional number of \$DTB (as \$DTBT in a pack) to the \$DTB reserve. The company purchases these \$DTB from the secondary market. The company records the remaining balance of fiat used to purchase the package as revenue. In Figure 2, the in-app store is managed by the company who purchases the \$DTB from the secondary market on behalf of the store.

For any additional uses described below, the company can replenish its individual supply of \$DTB by also purchasing them from the secondary market.

During the game, the player can battle other players (where he or she can earn \$DTBT as a reward for playing).

A player can trade creatures for \$DTBT at the peer-to-peer trading hub, described as the auction house in Figure 2. Within this auction house, the player can place their creatures on auction for \$DTBT, and have other players bid on them. If an action is successful, the selling player will receive the buying player's \$DTB

² <http://www.econmentor.com/college-macro/associated-macroeconomic-topics/money/equation-of-exchange-mv=pq--quantity-theory-of-money/text/362.html>

³ <https://medium.com/@cburniske/cryptoasset-valuations-ac83479ffca7>



Figure 2: Diagram of new token economy

and the buying player will receive the creature. Other items may also be added to the auction house over time.

If the player wants to withdraw \$DTBT, they can log into their account via the game's website. When redeeming \$DTBT, they are destroyed and the equivalent \$DTB are sent to the player. The steps in this process are highlighted using number 3 in Figure 2. The website interface may have a KYC/AML element to prevent money laundering. Once the \$DTB have been redeemed, they can be sent to an out-of-game counterparty compatible wallet. Players could follow the same process for creatures.

The optional second out-of-game wallet can be either a new wallet or a link to an existing one. The out-of-game wallet is on-chain, which allows players the ability to store creatures and \$DTB out of the game if they wish. We believe any blockchain game should allow this functionality.

3.1.1 Illustrative Transaction

Please note, that this is illustrative and not indicative of the weighting of packs.

A player buys a \$10 USD pack from the in-game store. In this pack, she receives two creatures, five relics, three skins, two spells and \$4 USD worth of \$DTBT. At the time, one \$DTB is worth one USD, so she receives 4000 \$DTBT. The in-app store automatically transfers four \$DTB to the \$DTB reserve to maintain the \$DTB and \$DTBT ratio. Through extensive playing, she gains another 1000 \$DTBT. After levelling up one of her creatures, she decides that she wants to sell it and lists it on the auction house.

The creature is deemed valuable because it is rare (one of 100 ever made), and because she is skilled, it has never lost a battle. She sells this creature for 10,000 \$DTBT.

She now decides to cash out her \$DTBT. She logs onto the website and completes the required KYC and withdraws her 15,000 \$DTBT. These are removed from circulation and the proportional amount of \$DTB – being 15 – is sent to her counterparty enabled wallet. She then decides to sell the 15 \$DTB on the secondary

market and because the game is popular, the price of \$DTB has risen to \$2 USD each. She sells these 15 \$DTB for \$30 USD.

3.2 Economy design elements

There are a number of different elements of this design, including:

3.2.1 *\$DTB Reserve*

This is the reserve of \$DTB that the company will keep in a separate wallet. This reserve will grow as more \$DTBT are released into the game. However, it will always correlate to the number of \$DTBT within the game. When a user wants to withdraw \$DTB from the reserve they can do so through the website and their corresponding \$DTBT will be destroyed.

3.2.2 *Augmentors Store*

This is the in-game store, where users can purchase creatures, consumables and packages.

3.2.3 *Consumables*

Consumables consist of potions, once off spells, and a variety of other digital game assets. Another consumable of note is the non-tradable coin. This coin is not sold by the company, but can be rewarded to players for battling and other game-enhancing behaviour. It is not a tokenized coin and will not be tradable outside of the game. It wouldn't be possible to convert from the consumable coin to \$DTBT. This coin allows users to play the game for free which is critical for a free-to-play game. It is earned through 'grind'.

3.2.4 *Trading Hub*

The Trading Hub allows players to exchange creatures with one another. In order to purchase a creature, the user needs \$DTBT. The current design of the trading hub involves a bidding process, where creatures are placed for bidding and anybody can bid on them over a certain time period. A Vickrey auction⁴ may solve this issue, but more research is required.

3.2.5 *Leveler*

Players must maintain a certain balance of \$DTBT in their in-game wallet to access certain levels. This is one of the initially planned staking mechanisms. A number of staking mechanisms are planned for the game economy. These mechanisms serve to lower the velocity of the token. The lower the velocity, the greater the overall value of the monetary supply (and in turn the token price) according to the equation of exchange:

$$M = \frac{PQ}{V} \quad (1)$$

M = Monetary Supply of \$DTB

PQ = Value of in-game economy in \$USD

V = Velocity of \$DTB tokens

3.3 Economy design advantages

3.3.1 *Eliminates the negative aspects of deflation*

The new system does not burn tokens and hence there is no deflation. In fact, as more tokens are converted into \$DTBT, there will be an inflation of \$DTBT. This reduces the urge of users to 'hodl' for token price appreciation in-game. The lack of in-game 'hodling' should benefit the network value.

3.3.2 *Link token value to the network value*

Ideally, the value of the token should be a function of the size of the network, roughly following Metcalf's law⁵. We believe this is now the case with the new \$DTB system. The value of the token and the value of the

⁴ https://en.wikipedia.org/wiki/Vickrey_auction

⁵ https://en.wikipedia.org/wiki/Metcalf%27s_law

network are aligned. As more players use the game, there is more demand for \$DTB (through the \$DTBT), as tethers are purchased with \$DTB. The previous system did not have this benefit.

$$MV = PQ \quad (2)$$

Mathematically, PQ is the crypto-economy. As PQ increases (through more purchased packages) then so should M, which is the total value of all coins assuming velocity can remain constant.

3.3.3 Maintain Velocity of token

Velocity is one of the most important aspects of any crypto-economy, yet also one of the least understood. It is thought that the velocity of badly designed crypto-economies will be extremely high as there is no reason to hold the token. A high velocity reduces the value of the token. On the other hand, a low velocity is also bad as it indicates there is no activity within the economy. Thus, a Goldilocks zone velocity is optimal. A moderate velocity ensures that the value of the economy is reflected in the value of the token. It is thought that the optimal velocity will be different for each token economy. The current mechanism incorporates staking mechanisms, such as the leveller, which reduces velocity. If necessary, more velocity reducing levers can be added to maximise the value the token captures.

A detailed explainer on velocity, its effect on tokens and different velocity reducing levers can be found [here](#).⁶

3.3.4 Align incentives

The primary aim of this new design is to align the interest of the Augmentors business, the backers, the players and all other participants in the network. In this new system, Augmentors derives its revenue from the selling of creatures and \$DTBT for the internal virtual economy (which is powered by \$DTBT). This means that the business is highly incentivized to stabilise and grow the value of the network and coin.

In the new system, players are incentivized to participate and to encourage other potential players to join the game. In the new economy, the early players will benefit from a larger network because their \$DTBT will appreciate in value as the network grows in size. Early adopters will receive more \$DTBT than later players because more \$DTBT are issued per a dollar when the price of \$DTB is lower.

This feedback effect is shown in Figure 3, as more players become \$DTB holders, then the game should have more 'evangelists'. In turn, they should raise awareness, which should drive more players. It is important that the game has to be fundamentally attractive (i.e. fun) to play because the later players will receive less financial benefit from the game. Thus, they need more utility better know as funness.

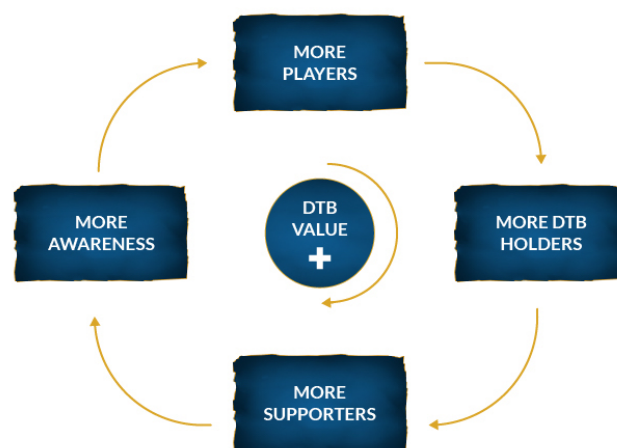


Figure 3: \$DTB Feedback loop

In the new system, where \$DTBT is the in-game currency, it can be used as a marketing tool to bring in new players. These new players make the game more "sticky" and add to the network effects. The players compensate for their marketing costs because they produce a stable, healthy ecosystem of matches/ games and supports. They are benefited through an appreciating \$DTB price. Figure 3 illustrates this feedback loop.

⁶ <https://medium.com/newtown-partners/velocity-of-tokens-26b313303b77>

4 CONCLUSION

In the initial \$DTB economy, the price of \$DTB is linked to profits and not the network of players, backers and other participants. This paper has described a new token system to enable \$DTB through a new tether to benefit from the size of the network.

This new token structure, which powers an in-game economy, creates clear value and utility for the token. We believe that linking \$DTB to the in-game economy of virtual goods will result in \$DTB being a dependent of the network value. Secondly, by aligning incentives, the new design creates complementary effects that will cause positive feedback loops in the network. Thirdly, we believe that a token value that is clearly dependent on the network size will create a stable network that grows organically and it will also provide long-term price stability. Overall, we believe that this token has a clearer link to the network value and that it can maintain a long-term sustainable price that benefits all stakeholders.