BNBPay

Whitepaper

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The Future of Merchant Crypto Payments

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Chapter 1/
Introduction

1.1 *What do we do?*

As the world of cryptocurrencies is vastly expanding and growing, the demand for a utility to use them becomes more apparent. Due to decentralisation, cryptocurrency has revolutionised the way we do transactions and various other services. However, no matter how decentralised cryptocurrencies are, making payments with them will always entail extra fees and additional steps in the same way that centralised options do.

At BNBPay, we are determined to sculpt the future of cryptocurrency payments. We strive to change the payment approach that no other entity has managed to do yet. With the $BPAY token, BNBPay will be one of the most promising projects of the recent technological era.

Behind the BNBPay project are a group of payment specialists and pioneers with decades of combined experience in the payment and retail POS & commerce industries. The end product envisioned by BNBPay is a cryptocurrency payment ecosystem that is ultra-efficient for investors, consumers, and businesses.

Chapter 2/ Market Analysis

2.1 *The Emerging Digital Payment Market*

Despite the devastating effects of Covid-19 on traditional businesses such as restaurants and cafes, brick-and-mortar retailers and significant events and conferences that rely on face-to-face interactions, the pandemic has become a blessing in disguise for digital service providers. The United Nations Conference on Trade and Development noted that the e-commerce share of global retail trade has risen from 14% in 2019 to about 17% in 2020. In addition, data from OECD showed that e-commerce transactions in many countries have shifted from luxury goods and services towards everyday necessities.

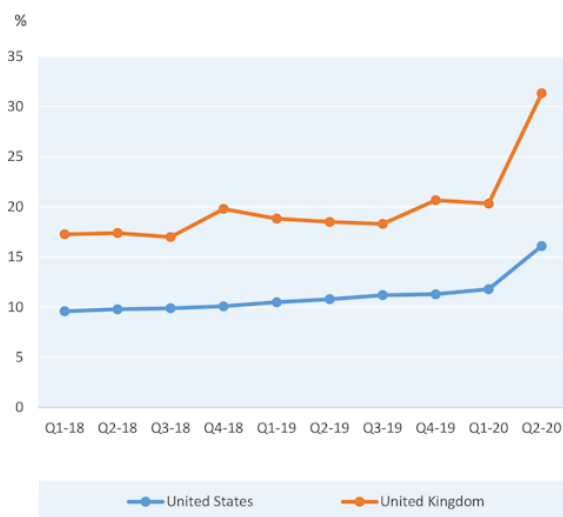Figure 1.a. Share of e-commerce in total retail sales, United Kingdom and United States (2018-2020)

Figure 1.b. Retail turnover, year-on-year change, EU-27 (July 2019-20)

Source: OECD

Not surprisingly, the rise of digital services has led to the rapid adoption of digital payment. As businesses migrate to provide online services, they can no longer rely entirely on cash transactions and have set up digital payment infrastructure to process

customer payments. At the same time, consumers have actively embraced digital payment services, despite initial concerns over security and privacy. Businesses and consumers now see the vital benefits of digital payments, such as contactless transactions and the ability to pay from anywhere. It serves as a critical way to reduce physical interactions at the point of sale and physical interaction with shared devices.

More importantly, this trend is not a fad, particularly for contactless transactions. ABI Research, a global tech market advisory firm, believes that contactless will ultimately become the future's de facto digital payment type. According to McKinsey's 2021 report on the payment market, the in-store transaction volume that involved contactless payment via physical card and mobile wallet has risen significantly since the start of Covid-19 and will continue to grow moving forward.

2.2 The Potential of Mobile Wallet

The wide availability of contactless credit cards kickstarted the initial wave of contactless payment. The popularity of contactless credit cards continues to grow in countries with mature digital payment systems, as consumers typically stick to the payment methods that they are familiar with due to security concerns and ease of use. However, the scenario is very different in developing markets with less mature digital payment infrastructure. As a result, alternative forms of digital payment play a critical role, particularly mobile wallets. China is a prime example as Alipay and WeChat Pay are the two top global leaders in mobile wallet technologies. In developed markets, tech giants such as Apple, Google, and Samsung are playing catch-up after sensing the enormous market potential of mobile wallet technologies. They are actively acquiring merchants and expanding their user base to compete with the top Chinese vendors.

Essentially, three main trends fueled the popularity of mobile wallets:

🖝 *Mass adoption of smartphones across the global population*

Since people travel around with their smartphones, mobile wallets that reside in a smartphone free people from carrying the need for a physical wallet and dramatically reduce payment friction. In 2021, over 80% of the world's population will have at least one smartphone in their pocket, according to Deloitte. The percentage is much higher in developing countries, where the smartphone is the primary means of internet access for many.

🖝 *Tight integration with a wide range of services*

Compared to debit and credit cards offered by financial institutions, technology vendors that engage in the platform economy provide mobile

wallet services. These vendors, such as WeChat, Alipay, GrabPay, and Line, develop their multipurpose app that serves as a single portal to a wide range of virtual products and services. The diversity of services offered by these companies have become an industry norm, resulting in other specialised mobile wallet vendors expanding their in-app services through partnerships and collaborations.

➤ *A youthful user base*

According to a TechCrunch report, mobile wallet adoption in the USA is widespread among younger consumers, including Gen Z and millennials. Gen Z and millennials are the demographic with the most significant upside in spending desire and capability while being the most tech-savvy.

Due to these factors, mobile wallet technology is likely to become the dominant payment method in the post-pandemic world. As consumers become increasingly proficient in tech while prioritising personal hygiene, convenience, and overall user experience, many digital services have ditched traditional payment methods and adopted mobile payments. At the same time, traditional banking institutions have also invested in mobile wallets to improve the banking experience. Consequently, more merchants will accept mobile wallets and deploy them on more personal device categories other than smartphones. Since mobile wallets continue to gain widespread acceptance, various forms of currencies, including digital currency and cryptocurrency, can potentially become widely accepted.

2.3 *Rise of Binance Smart Chain DeFi*

Binance, the world's largest cryptocurrency exchange, has caused a rise in cryptocurrency activities in recent years. In 2020, Binance launched the Binance Smart Chain(BSC). The BSC is a hard fork of the Go Ethereum (Geth) protocol, and as such, shares many similarities with the Ethereum blockchain. However, BSC developers have made significant changes in some key areas.

One key area is that the BSC uses a Proof-of-Stake-Authority (PoSA) consensus mechanism similar to regular Proof-of-Stake (PoS). The network is secured from the staked coins that the investors have locked into the contract. The more coins an investor stakes, the more they can earn as a reward from the BSC network. Not only is PoS more efficient than Proof-of-Work (PoW), which Bitcoin uses, but it is also much more eco-friendly due to the low energy costs. For immediate comparison between Ethereum and the BSC, the average daily fee on 18 April 2021 for Ethereum was 170 Gwei, compared to 7.33 by the BSC.

Daily average transaction fees (Gwei)

Source: BSCscan.com, Etherscan.io

■ Binance Smart Chain ■ Ethereum
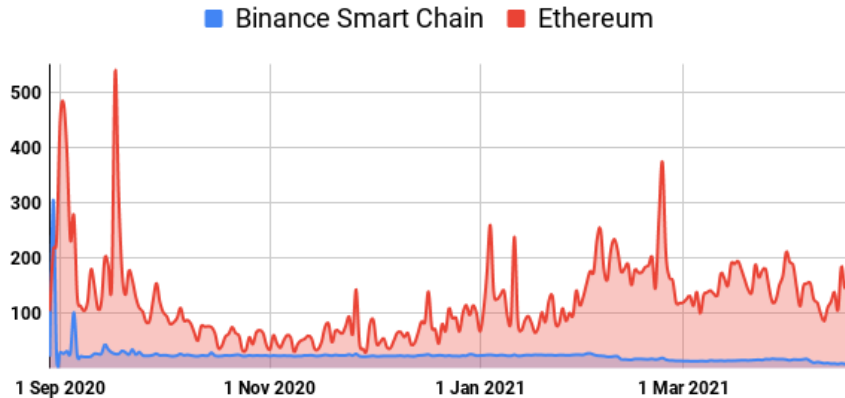
Source: copper.co

Using features such as the Binance Bridge and Ethereum Virtual Machine (EVM), the BSC has become one of the cheapest, fastest, and most extensive cryptocurrency networks of 2021. Just less than one year after the launch of the BSC mainnet, the value locked by DeFi projects on BSC has reached a whopping US$30 billion.

Value Locked by DeFi Project on BSC (Gross)
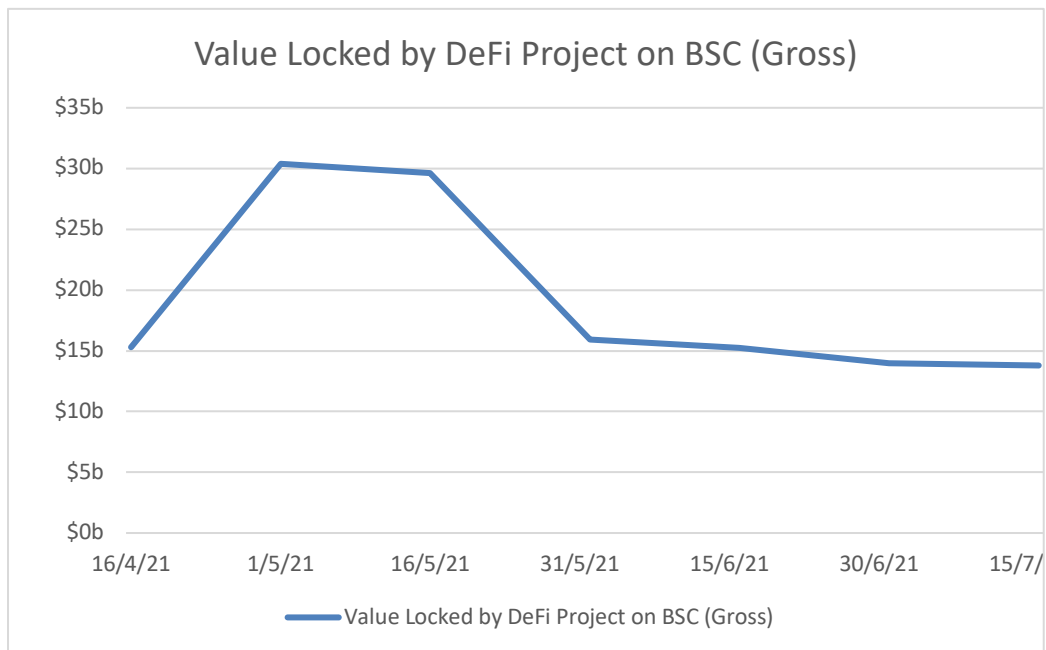
Source: DEBANK

2.4 Market Pain Points

Problems to Solve

Amidst the booming BSC DeFi market and online payment market, we have uniquely positioned BNBPay to solve the pain points faced by our four significant audience groups:

Token Founders / Development Team

❧ *Limited use cases of tokens*

Be it the "meme token" or the utility token, token founders often find themselves limited by the token use cases. This major constraint affects founders who want to grow their tokens to the next level and create the next big thing. In marketing brainstorm sessions, they often come across an idea to make their token tradable in e-commerce and shops. Still, with the lack of capacity or expertise in execution, the idea is regularly dropped.

BSC Token Investors

❧ *Limited use cases of meme tokens*

In the cryptocurrency world, a new, growing class of cryptocurrency traders have been emerging. They trade popular tokens that might seem to have little to no underlying value or use cases but with the possibility of getting a significant return on investment (ROI). Just like token owners, they often hope their tokens can do a little bit more.

❧ *Reluctancy to sell for a profit with the belief the token will grow*

Investors always find themselves in a situation where they are reluctant to sell a token for profit when they believe the token will increase further in value. Instead, they hope for a solution that maximises the return while holding to their tokens.

❧ *Tediousness to spend their crypto*

The majority of the investors find it tedious to cash out their cryptocurrencies to spend on daily expenditures. Certain countries are better than others when it comes to the on and off-ramp of crypto. Those who live in jurisdictions where the government is unfriendly to crypto can often find it frustrating cashing out their crypto. They are

always looking for a solution that allows them to pay for everyday expenses.

Consumers

- **Need for a low cost and secured fund transfer method**

  Cross-border fund transfer can be costly and could take days to complete. Typical charges incurred are one-time cross-border transfer service fees, handling fees, and facility fees. Consequently, there is often a lousy exchange rate being used to benefit service providers.

- **Victim of credit card fraud**

  Although a chargeback policy protects credit cardholders instituted by all major credit card providers, they often lose precious time handling, reporting, and replacing their stolen credit cards.

- **Identity protection**

  When consumers engage in fund transfer services, their entire identity information will be left in the hands of the service providers. If the service provider makes a mistake or does a poor job in safeguarding its client data, personal information will be leaked and might end up in the hands of people with bad intentions.

Merchants / Businesses

- **Eagerness to tap into the booming cryptocurrency industry**

  Merchants, businesses, be it offline or online, have been eagerly looking for technology or platforms that allow them to start accepting cryptocurrency.

- **Payment integration solution to existing Enterprise Resource Planning (ERP)**

  Accepting cryptocurrency payment is not all about payment facilities. Established businesses are looking for a system that can be integrated easily into their company ERP to facilitate tax filing and accounting.

➤ *Protection from credit card chargeback*

Unfortunately, merchants do not have enough protection when it comes to fighting chargebacks. Even if a merchant has a 'no 'refund' policy, a credit card chargeback policy will still allow consumers to file chargebacks. As a result, merchants are always at the losing end when credit card fraud happens. If a business has too many chargebacks as a percentage of their total transactions, their account can be shut down, or their per-transaction costs may go up significantly.

Chapter 3/

Our Plans

3.1 Vision and Goals

BNBPay will change the way we conduct cryptocurrency payments. This is achieved by making payments fully decentralised and scalable with all BSC tokens since they are integrated into our BNBPay ecosystem. We are enabling BNBPay to be the most scalable payment processor in the crypto market.

Trustless, immutable, and efficient are our core principles to build the payment industry's decentralised digital economy. Our mission is to sculpt the future of cryptocurrency payments.

3.2 Proposed Solution

To address the pain points of token founders, BSC token investors, consumers, and businesses, we have come up with a complete solution with the following characteristics:

- *Provide alternative options to traditional payments such as Visa, MasterCard, and PayPal, which charge up to 3.9% per transaction*

- *Decentralised payments with zero single point of failures*

- *Cross border transfers without the fear of third party monitoring*

- *Fast, cheap, and reliable – cost pennies to transfer no matter the amount*

- *Make payment rewarding via staking.*

Through the BNBPay platform:

Benefits for Token Founders / Development Team

- *Token founders can add a new use case to their token – token holders can spend the token on daily expenditures*

- *Token founders can partner with a particular merchant to run promotions and campaigns, such as exclusive discounts for items paid in specific tokens.*

Benefits for BSC Token Investors

- *Investors can spend their favourite BSC token on daily expenditures instantly without having to go through a lengthy and tedious withdrawal process*

- *Payment becomes near-instant, as there is no need to spend time in queues waiting for payment confirmation*

- *Investors can stake BPAY tokens to earn more rewards while they spend*

- *Enjoy exclusive privileges and perks dedicated to the tokens they are holding.*

Benefits for Consumers

- *Consumers can make cross-border fund transfers without paying hefty transfer fees or exchange rates to a third party, and the transfer happens immediately*

- *Consumers can now shop online securely without having to worry about credit card information getting stolen*

- *Make payments and purchases while being protected from third party tracking.*

Benefits for Merchants / Businesses

- *Save on merchant fees with each transaction*

- *Merchants get to focus on sales without having to worry about credit card fraud and chargeback*

- *Tap into the booming BSC market and add a new source of sales to increase revenue*

- *Easily integrate crypto payments into existing ERP or e-commerce websites*

- *Creates options to opt for the additional easy-to-manage accounting software to manage sales reports and tax filing.*

3.3 EIP-1363 Protocol: ERC-1363 Payable Token

There is no way to execute code after a [BEP-20](#) transfer or approval (i.e. making a payment), so to make an action, it is required to send another transaction and pay GAS twice. EIP-1363 protocol has been proposed and created to address this shortcoming.

We have incorporated EIP-1363 in the BNBPay ecosystem to make token payments easier and working without the use of any other listener. It allows creating a callback after a transfer or approval in a single transaction.

Many proposed uses can accept [BEP-20](#) payments. Examples could be:

- *To create a token payable crowd sale*

- *Selling services for tokens*

- *Paying invoices*

- *Making subscriptions*
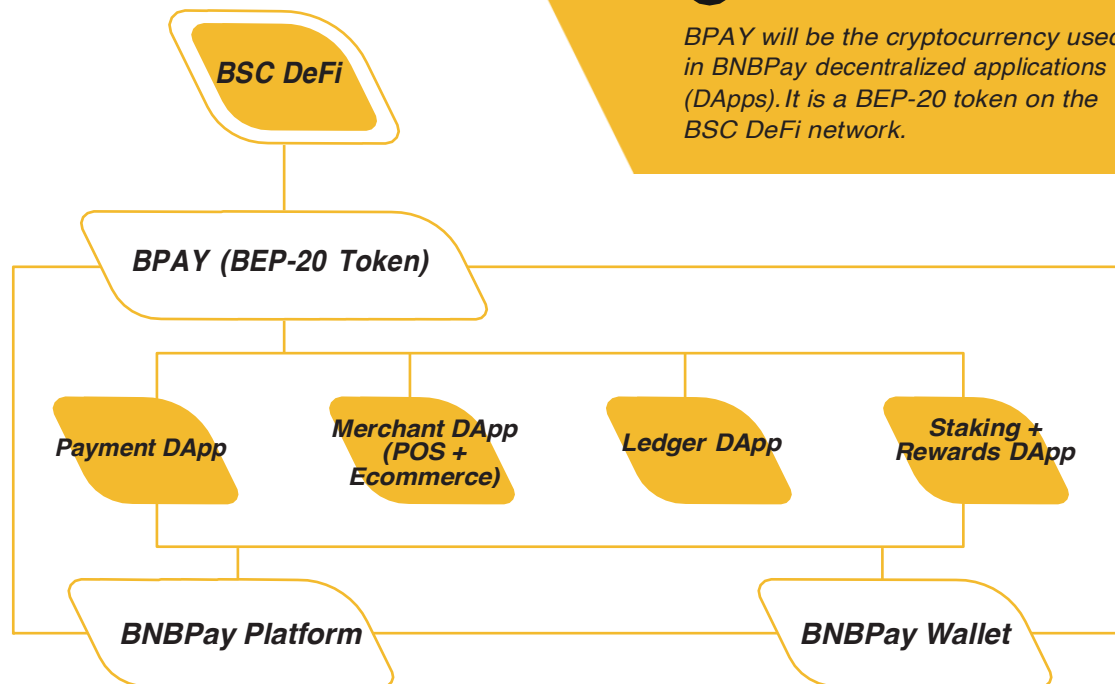
For these reasons, it was named the **"Payable Token"**.

3.4 The BNBPay Ecosystem

Purpose, the underlying protocol, and cryptocurrency

BNBPay is the future of decentralised, scalable cryptocurrency payment tailored for merchant transactions. BNBPay incorporates the **ERC-1363 protocol** to enable users to pay daily expenditures using BPAY tokens and other BSC tokens built on the Binance Smart Chain (BSC). On top of that, users are rewarded with BPAY tokens as they spend their BSC tokens.

The underlying currency used for all transactions on the BNBPay platform will be $BPAY. Investors can purchase this cryptocurrency through PancakeSwap. In the future, investors will also be able to buy $BPAY in other cryptocurrency exchanges. Unlike other cryptocurrencies, $BPAY cannot be mined, and its total supply is finite (10 billion).

Platform Overview

BPAY

BPAY will be the cryptocurrency used in BNBPay decentralized applications (DApps). It is a BEP-20 token on the BSC DeFi network.

- *Online platform for all stakeholders to connect and interact*

- *Creation of merchant and listing of all e-commerce exchanges*

- *Listing of BNBPay acceptable stores and locations*

- *Global marketplace for virtual and physical merchandise.*

- *Standalone client for users to interact with BPAY and DApps*

- *Mobile wallet to deposit/withdraw BPAY*

- *Stake tokens to earn rewards*

- *Reading and recording transactions on the blockchain*

- *Universal APIs to be developed to facilitate onboarding of other applications.*

Product - DApps: BNBPay Decentralized Applications

➤ *Payment Processing DApp*

- This DApp allows the payment and fund transfer to take place at near-instant speed.

- DApp decides the merchant payout currency (BPAY, BUSD / other tokens) based on the merchant preferences.

- We expect to leverage the DApp further to support daily transfers, cross-border transfers, and payment transfers.

Merchant Dapp:

- This DApp is used to store the merchant information, status, and merchant fees if applicable.

- It will also store the ongoing promotion or rewards with any participating token and define the discount and perks.

Ledger DApp

- Ledger DApp will be used to store all the payment information.

- DApp will store items purchased, item details, quantity, price, and discounts.

- Data can be exported through the BNBPay Merchant platform.

Staking & Reward DApp:

- The DApp allows BPAY staking for rewards.

- DApp will lock the BPAY tokens according to the desired locking period and distribute rewards periodically.

Product - Websites: BNBPay Platform

Merchant Portal

- This merchant portal allows the merchant to sign-up and start accepting cryptocurrency in e-commerce.

- Merchants can manage API's with the integration module to integrate reports and accounting reports to their existing ERP.

- It will be a one-stop place to manage offers, discounts, and print reports.

BNBPay Web Wallet

- This is a stripped-down version of the full BNBPay Wallet in the web browser.

- Users can make payments easily to any e-commerce website in just a few clicks.

- Wallet and balance are linked to their BNBPay Wallet.

- Users can stake BPAY tokens and receive rewards when they make payments using BNBPay

Product – Mobile Apps: BNBPay Wallet

﹏ *BNBPay Wallet (iOS + Android)*

- This main BNBPay product allows users to create wallets easily, get BPAY and make payments using BPAY.

- Users can stake BPAY to earn interest through the wallet app.

- Users can track their cryptocurrency expenses easily and can export data for tax filing purposes.

- Wallet enables users to scan QR to make the payment instantly at café, restaurants, shops, and e-commerce websites.
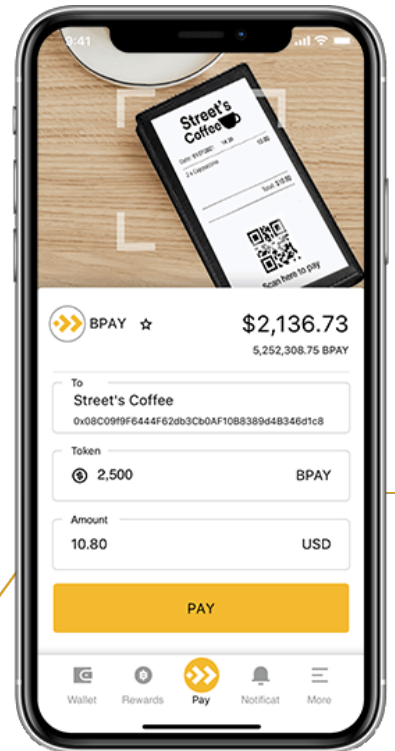
﹏ *BNBPay POS (Payment Terminal / POS Terminal)*

- BNBPay POS Terminal is a standalone payment terminal for cafes, restaurants, retailers and businesses on the go.

- BNBPay POS Terminal will be a plug-and-play device that supports any modern POS system.

- Merchants can start accepting crypto payment by purchasing the BNBPay standalone POS terminal.

BNBPay System Architecture

The core of BNBPay heavily relies on platform development. Four primary considerations in choosing our tools and platforms have been identified. They are Security, Scalability, Ease, and Extensibility; these have been amalgamated into our core values:

- *Security – Protect against cyber-attacks.*

- *Scalability – Accommodate high user traffic.*

- *Extensibility – Allow the addition of modules in the future*
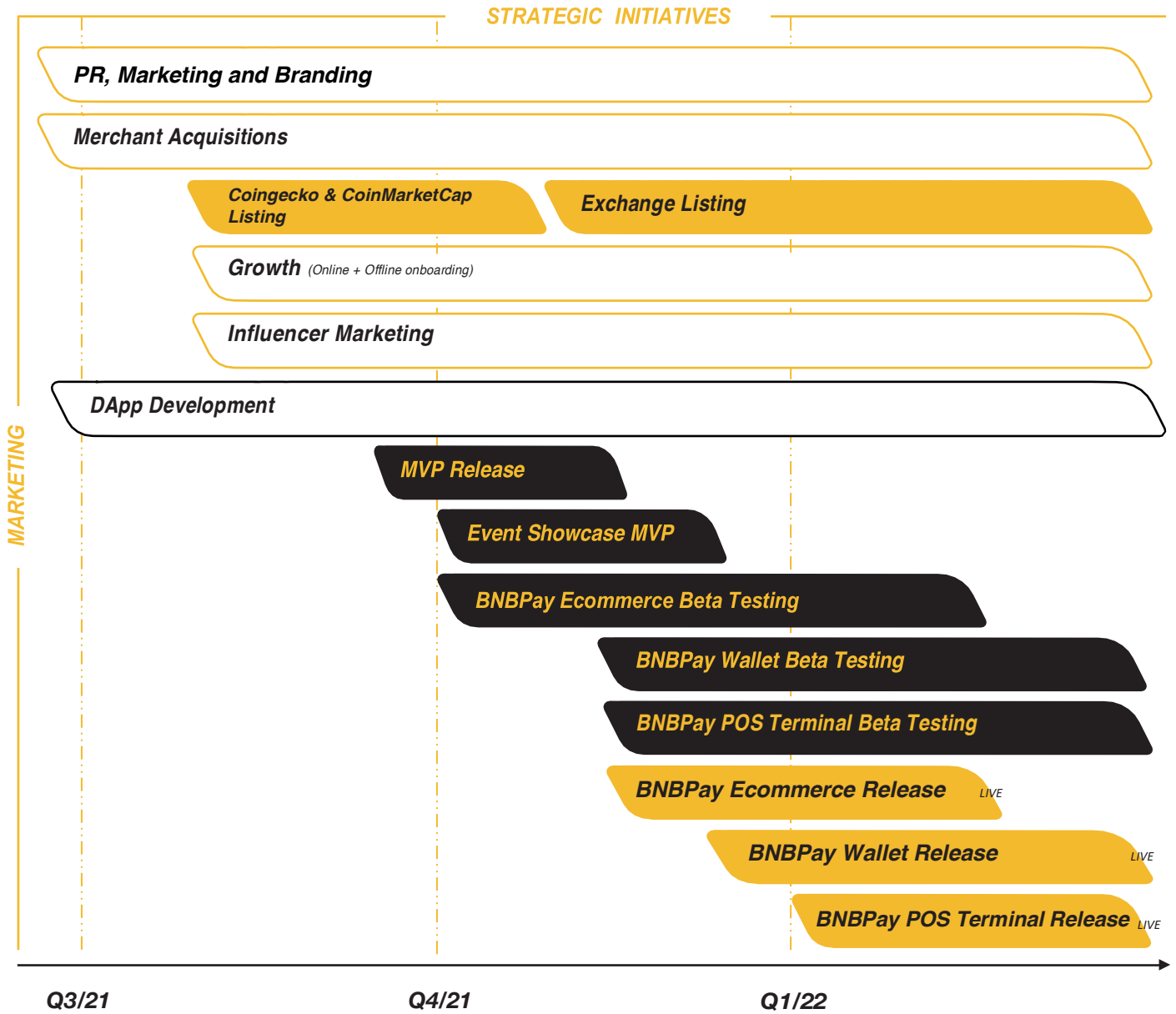
- *Ease – Ensure least development effort.*
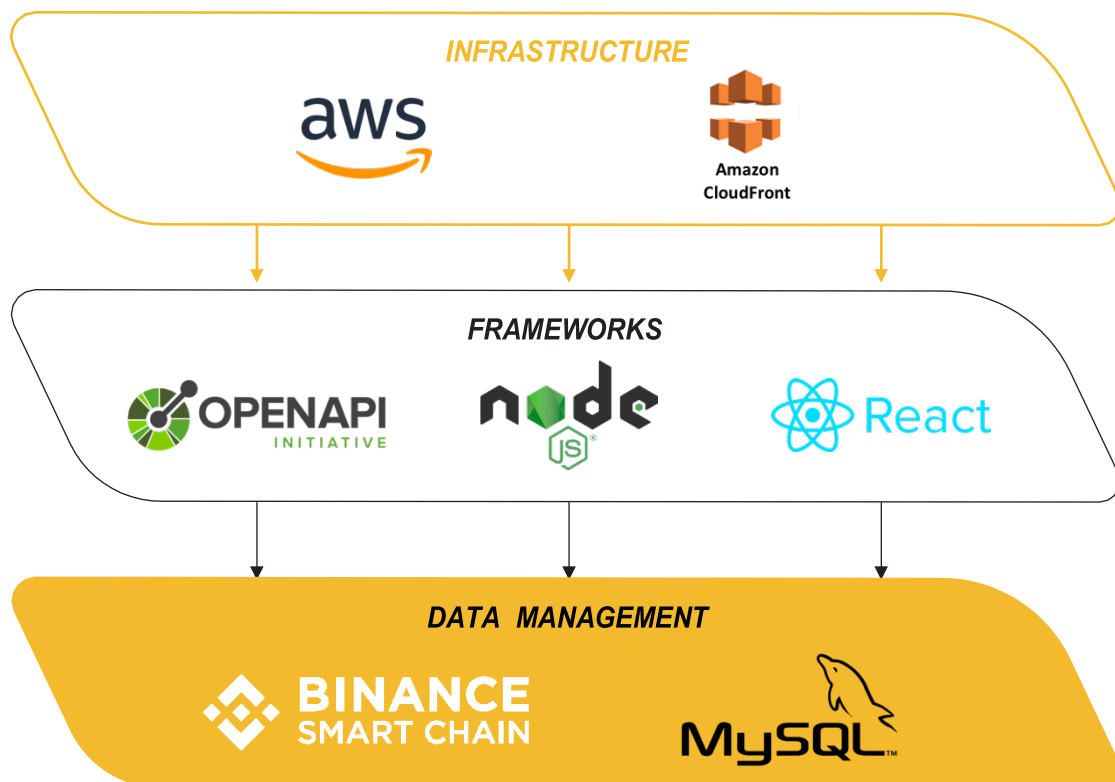
Competitive Analysis: Peer Models

We identified five peers with business models focus on the payment industry.

	BNBPay	*PayPal*	*Banks*
Fees	Low, Fixed (US$0.05 -US$0.30)	Typical MDR above 3% per transaction depends on the volume	Typical MDR above 1.5% per transaction depends on the volume
Processing Speed	Near-instant (Average between 1-5s)	Instant	Instant
Security	Secured, immutable, tamper-proof	PCI DSS Level 1	PCI DSS Level 1
Identity Protection	Pseudonyms, shield identity and protect personal privacy	Identity is linked, identifiable, and monitorable	Identity is linked, identifiable, and monitorable
Interest Earning	Yes, stake to earn high interest	No interest	Less than 1%

3.5 Roadmap

STRATEGIC INITIATIVES

MARKETING

- PR, Marketing and Branding
- Merchant Acquisitions
- Coingecko & CoinMarketCap Listing
- Exchange Listing
- Growth (Online + Offline onboarding)
- Influencer Marketing
- DApp Development
- MVP Release
- Event Showcase MVP
- BNBPay Ecommerce Beta Testing
- BNBPay Wallet Beta Testing
- BNBPay POS Terminal Beta Testing
- BNBPay Ecommerce Release *LIVE*
- BNBPay Wallet Release *LIVE*
- BNBPay POS Terminal Release *LIVE*

Q3/21   Q4/21   Q1/22

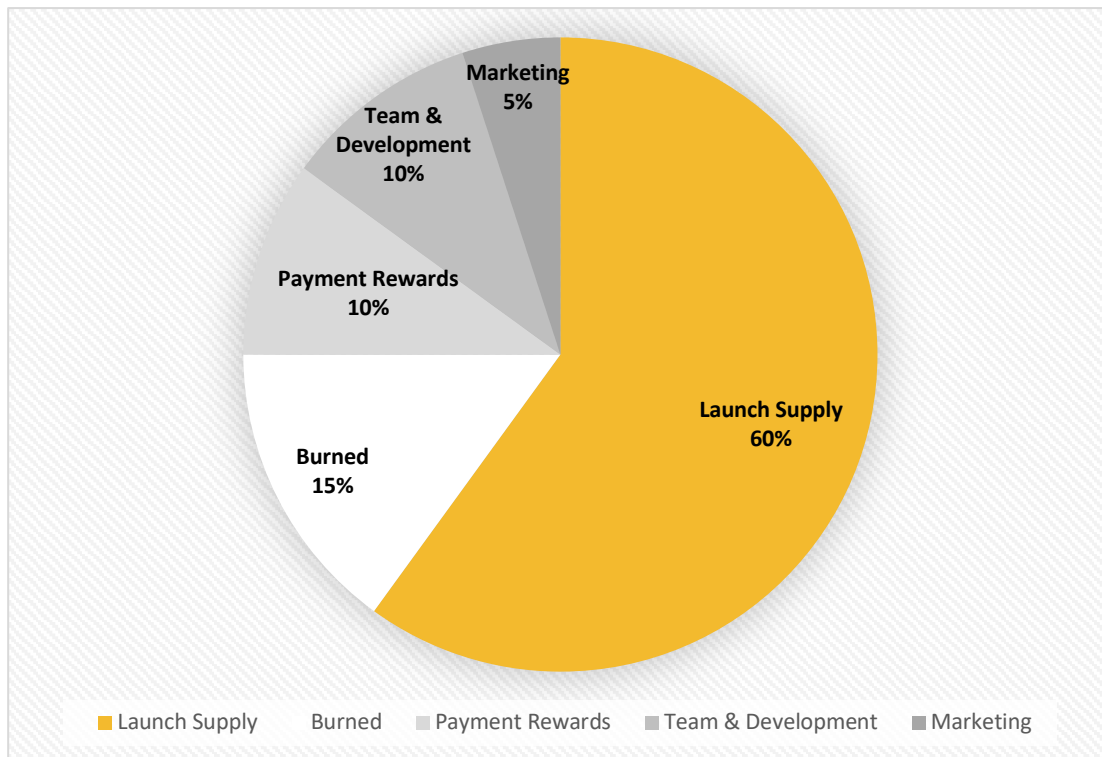## 3.6 Tokenomics

3.5.1 $BPAY Tokens

Total supply is **10,000,000,000 BPAY** which is coded with BEP-20 Smart Contract address **0xeBC76079Da0c245faE7225b58a57A54809b40618**.

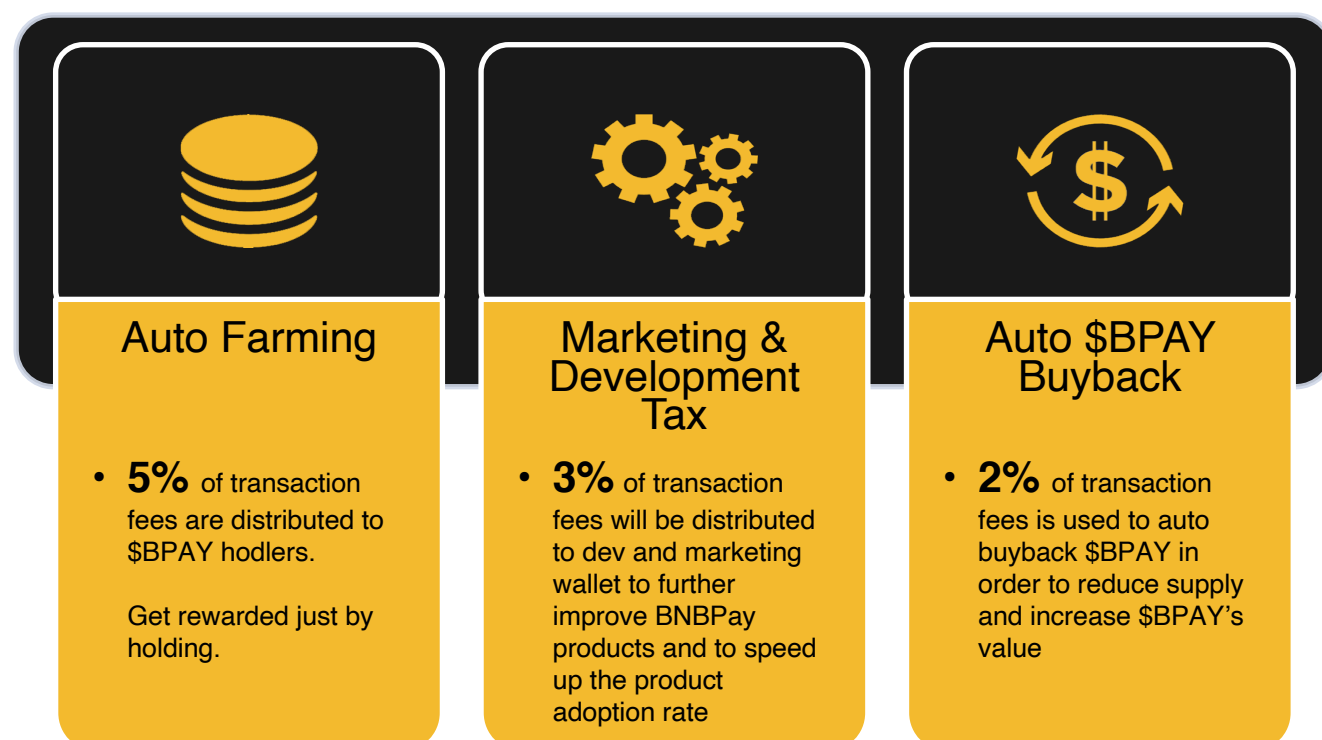Token distribution for the total supply is as follow

🍃 *60% public sale in PancakeSwap: 6,000,000,000 BPAY*

🍃 *15% to be burned: 1,500,000,000 BPAY*

🍃 *10% reserved for payment rewards: 1,000,000,000 BPAY*

🍃 *10% team & development: 1,000,000,000 BPAY*

🍃 *5% marketing: 500,000,000 BPAY*

3.5.2   PancakeSwap Trading Tax

We have designed the BNBPay tokenomics with early investors in mind. A 10% tax will be imposed on any buy and sell transaction. The tax will reward all existing holders and discourage MEV front running bots from siphoning value from $BPAY investors. The 10% tax will be lifted on buy transactions once the BNBPay payment system is launched.

Reflection

A buy, sell or transfer incurs a fee charges of 5% and the entire portion of this is re-allocated to every holder ("the yield"). The rebase mechanism works automatically and after each transfer, there will be an increase on every holder balance. The reward amount is conditioned upon the proportion of the holdings to the total supply and volume of the token being traded. The reward on every transaction = 5 % * Ntt * y / Ts. (y = the BPAY holding, Ntt : number of token being transferred, Ts : current total supply)

Auto Farming

- **5%** of transaction fees are distributed to $BPAY hodlers.

  Get rewarded just by holding.

Marketing & Development Tax

- **3%** of transaction fees will be distributed to dev and marketing wallet to further improve BNBPay products and to speed up the product adoption rate

Auto $BPAY Buyback

- **2%** of transaction fees is used to auto buyback $BPAY in order to reduce supply and increase $BPAY's value