



THE WORLD'S MOST  
SECURE COIN

# WHITEPAPER

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Purchase does not constitute investment.

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- (iv) rights under a contract for differences or under any other contract the purpose or pretended purpose of which is to secure a profit or avoid a loss;
- (v) units in a collective investment scheme;
- (vi) units in a business trust;
- (vii) derivatives of units in a business trust; or
- (viii) any other security or class of securities.

(g) you have a basic degree of understanding of the operation, functionality, usage, storage, transmission mechanisms and other material characteristics of cryptocurrencies, blockchain-based software systems, cryptocurrency wallets or other related token storage mechanisms, blockchain technology and smart contract technology;

(h) you are fully aware and understand that in the case where you wish to purchase any TPAY tokens, there are risks associated with TokenPay and the Distributor and their respective business and operations, TPAY tokens, the TokenPay Initial Token Sale and the TokenPay Wallet (each as referred to in the Whitepaper);

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**United States citizens and/or residents are prohibited from participating in the token sale.**

## FOREWORD

In 2010 I was introduced to a group working on a startup called TokenPay. Following a presentation by the company, I signed on as an investor. The mission was clear. TokenPay wanted to provide a secure and anonymous way for a consumer to pay a merchant by credit card. The technology was impressive and unique. Transactions occurred directly on the merchant's website through a client-side API. The platform worked, but there was a key missing element. That is, the ability to obtain card processing proved to be an insurmountable hurdle for the team. Despite an active compliance program that included all the usual KYC and AML procedures, no bank would agree to process for TokenPay. Ultimately the business failed because of this. But there was no shortage of demand with wannabe consumer and merchant clients clamoring for an account. The public was clearly beginning to embrace the idea of digital cash. It was however too early.

Fast forward to 2013 and a new emerging payment technology called Bitcoin was in the news after spiking in value from virtual pennies to over \$1000. Despite my suggestion for a potential move to a blockchain payment platform, it was simply too late for TokenPay to pivot. The core team had already thrown in the towel having been handily defeated by the iron curtain of the banking industry. At this point I began to deeply study fintech and this new form of money known as cryptocurrencies. I started compulsively writing for various financial media such as TheStreet and Seeking Alpha. It was at the latter site where I met a fellow writer and former hedge fund analyst named Derek Capo. Our relationship blossomed due to a mutual obsession over a Park City headphone company called Skullcandy. Eventually we became real life friends and business partners. We created a startup of our own called eFin. This is a website where ordinary investors could receive hedge fund level research in an automated fashion.

Around the same time, I stumbled upon an online stock trading community called investFeed. The nascent social media startup happened to be in the midst of its seed round. After speaking at length with the operators, I decided to make an investment. Outside of the two founders, I remain the largest shareholder of this company. During this time, Derek and I managed to build an impressive financial research platform. Through this process we met Tony Weeresinghe. He is a former executive of the London Stock Exchange and the founder of Ustocktrade. Tony was impressed with the type of research that eFin was producing and he invited us to present at the MIT Fintech Conference early in 2016. While at the conference, eFin launched an official partnership with Ustocktrade. The AI driven stock scoring system we developed was fully integrated into the Ustocktrade platform. This was great and all for us and it sure seemed like eFin was off to the races. However, I noticed something very different. The fintech conference was being dominated not by stock discussion, but by blockchain.



Early in 2017 after realizing the challenge that investFeed was facing in terms of traffic generation, I suggested to the founders that they should immediately focus on cryptocurrencies rather than stocks. While there were other investors that remained naturally apprehensive of the abrupt change in strategy, investFeed embraced the new concept. The blueprint was written and an ICO was quickly launched.

investFeed sold approximately \$4 million of an Ethereum based token in a matter of weeks. The investFeed platform is now flourishing. Traffic is surging and the future looks extremely bright. I could not be happier for the team and how my early seed investment has begun to sprout. With a roadmap that includes grandiose but realistic plans all the way out till the end of next year, I'm excited to see this all play out. The shift to cryptocurrencies was timely and no doubt the right move. We have not even seen the tip of the iceberg yet when it comes to blockchain technology, particularly when it comes to cryptocurrency applications. And I know this, because at the same time Derek was working hard on something very special. I had to get in on it.

After constantly hearing about countless hacks causing chaotic volatility in the cryptocurrency markets, Derek came up with a novel idea. He partnered with a group of obsessively privacy driven cryptographic coders on a top secret project. Over the course of nearly a year of intense programming the blockchain team created a new secure coin technology that can only be described as Bitcoin on steroids. With encryption and anonymity dominating the headlines, this appeared to be a winning concept. But to be a game changer, it was clear that what is needed is more than just a coin. Simply put, the missing link in all of these crypto platforms is the ability to turn digital assets into cold hard cash that can be realistically spent in whatever quantity without hassle. Through my international financial contacts I managed to locate the ideal bank for sale. We moved quickly to sign the necessary paperwork to begin the intense due diligence procedure. Firm plans are in place for the buildout of a next generation blockchain banking and payments platform driven by an amazing team of top industry professionals and advisors. This has been a long road for everybody involved in the TokenPay project since inception. However, I finally feel that all the pieces are now firmly in place. As Freud so eloquently said, "One day, in retrospect, the years of struggle will strike you as the most beautiful."

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## INTRODUCTION

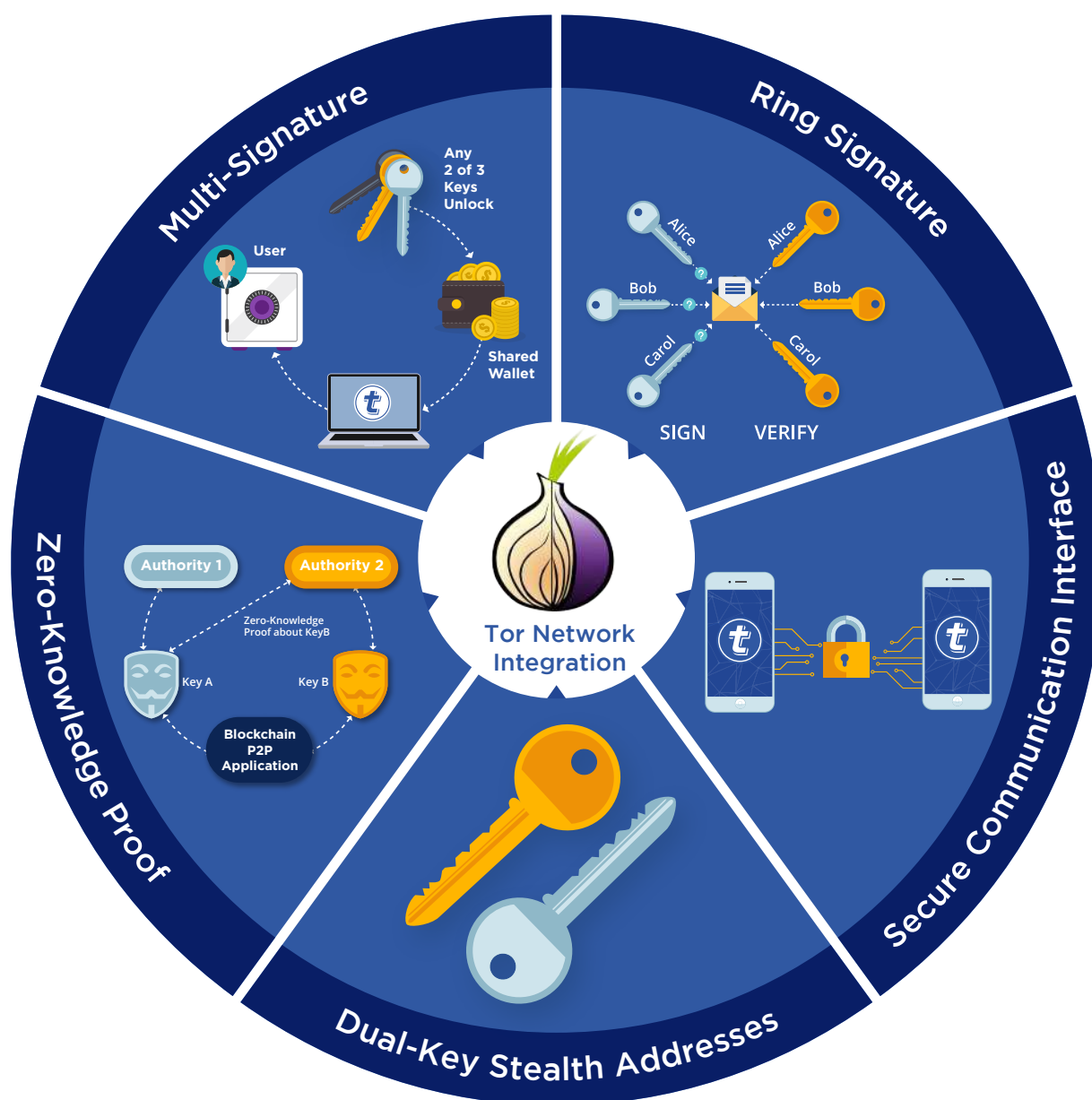
Digital currencies are often called cryptocurrencies due to the intricate technical details related to cryptography, but it did not start here. When looking back at human history, from the cowry shells of the Asian region to the first coinage in ancient kingdoms, mankind first saw printed money in medieval times. This breakthrough was followed by modern-day electronic versions of money. Today, there is an international banking ecosystem, which consists of banknotes, credit/debit cards, derivatives, stocks, bonds and much more. It was a combination of human ingenuity and societal commitments that drove the need to come up with innovative solutions to tackle the most intricate concept of human interaction handling the exchange of value. Cryptocurrencies represent the next level in the evolution of money. The technology behind this new form of money called blockchain. It is entirely driven by math and is completely decentralized. Most notably, unlike all previous forms of money, cryptocurrencies are not able to be manipulated. It is essentially money 2.0.

Blockchain is experiencing a period of exponential growth and adoption, not unlike the collective transition towards internet use in the 90's. Established in 2008, Bitcoin is a cryptocurrency based on blockchain. In just a matter of years, it has become a legitimate and tradable commodity on a global scale. It has massive liquidity with billions of dollars of Bitcoin traded and used daily. This exceeds the GDP of many sovereign nations. In fact, the market capitalization of Bitcoin now exceeds that of Goldman Sachs. There are 16 million Bitcoins in circulation among thousands of holders. Bitcoin is only one of the more than 850 cryptocurrencies available for people to buy, use and trade. These other coins are known as altcoins. Many are based on the Bitcoin platform, others on highly liquid Ethereum and Litecoin. The features of the coin vary widely from practical to practically useless depending on the underlying technology. However, there exists a dramatic misalignment in the metamorphic shift to digital currencies.

The major underlying problem is that traditional financial institutions and the related governing and operating regulations are not well aligned with cryptocurrencies. The concept behind public banks was designed and conceived hundreds of years ago. This is the early stage of a transition towards the decentralization of the financial world. But there is resistance. The powerful and entrenched institutions are not keen to transact in cryptocurrency. And the influence of powerful special interest groups ensures that traditional banks do everything possible to reject this new form of capital. However, blockchain technology makes the adoption of cryptocurrencies possible. It is mathematically fluid and moves much faster than a central bank, a regulatory body or international fiscal treaties. Currently, there exists an intermediate "limbo" state whereby many cryptocurrency holders are unable to benefit from the corresponding economic value. There must be a solution to this critical problem that is affecting an rapidly increasing amount of people.

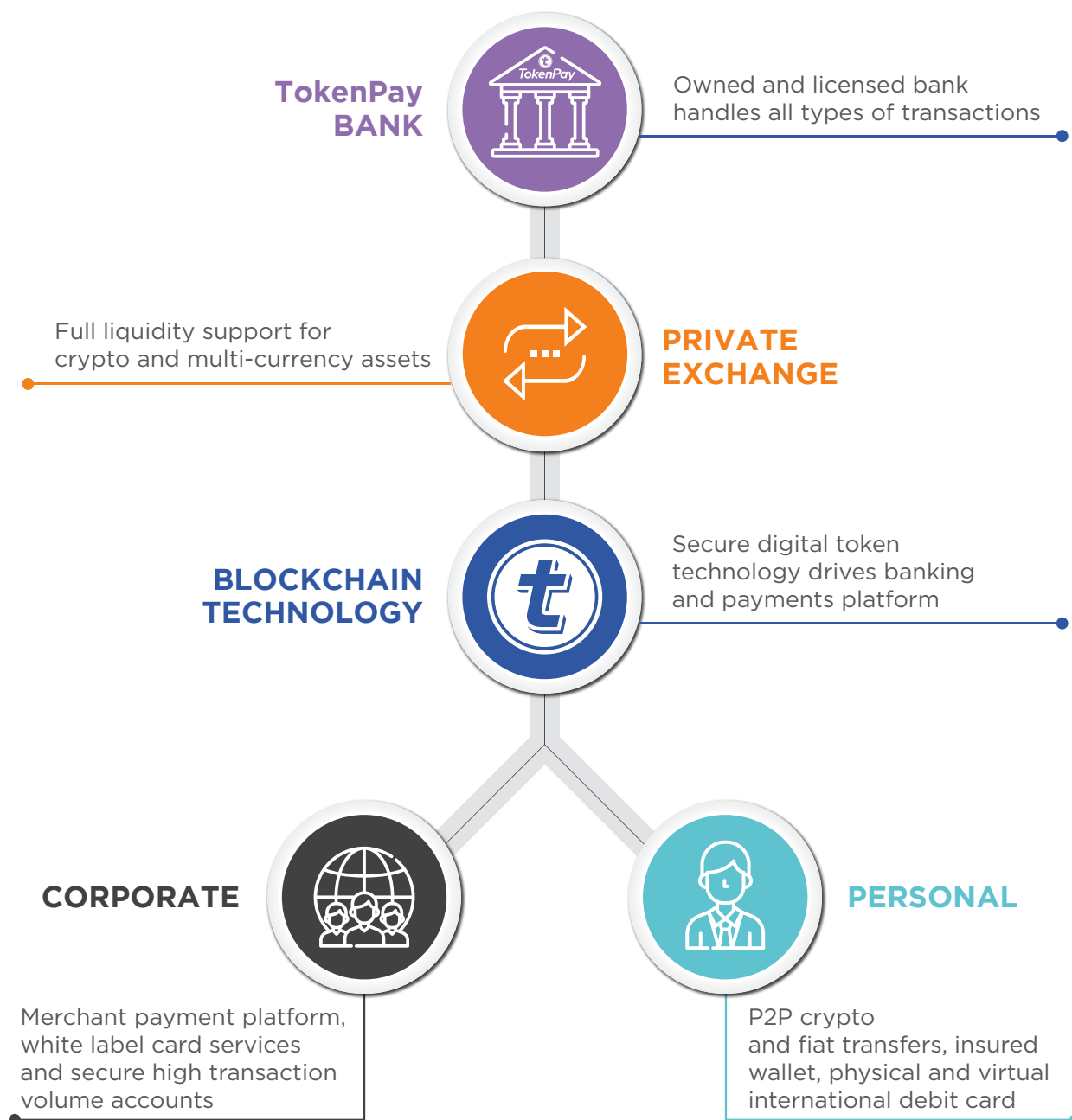
TokenPay's platform has been designed to combine the strengths of an established banking institution with the flexibility and future-forward potential of cryptocurrency. The network enables the exchange of Bitcoin, Ethereum and other major cryptocurrencies by bridging the transition gap to fiat. It also enables unfettered user access to cryptocurrency funds at a merchant point of sale locations and ATMs worldwide. Users will have the ability to store Bitcoin and other cryptocurrencies in a secure and insured wallet similar to what customers at a typical bank provide for fiat accounts. As a result, counterparty risk is naturally minimized with a licensed and bonded bank. The TPAY token sale funds are intended to be used to complete a banking acquisition. This bank will operate in a manner that will cater to and understand the unique needs of global cryptocurrency holders.

## **Pay DIGITAL TOKEN SUMMARY**



## TOKENPAY VISION

TokenPay's goal is to afford clients the ability to facilitate ordinary cryptocurrency to hard asset transactions with ease.



TokenPay is in negotiations to form a new bank charter, acquire a bank or partner with a 20 year old bank, in an attractive, privacy-driven jurisdiction. In addition to cryptocurrency holder consumer benefits, TokenPay plans to introduce a complete suite of merchant services through the robust TokenPay banking platform. All billing and fees collected will be denominated in the TPAY digital token, which has already been thoroughly tested and developed. TPAY is an ultra-privacy coin that is functionally superior to Bitcoin in many ways. It contains several unique features such as multi-signatures, ring signatures, dual-key stealth addresses, ZK proofs (zero-knowledge), along with a fully encrypted and decentralized Tor network integration. TPAY is the backbone of TokenPay's fundamentally core cryptocurrency-friendly banking integration.



## SIX KEY Pay SECURITY FEATURES THAT BITCOIN DOES NOT HAVE

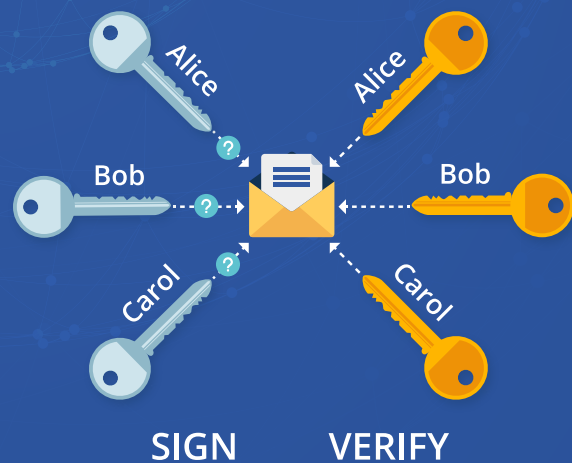
### Multi-Signature Transactions

Standard transactions on the TokenPay network could be called “single-signature transactions,” because transfers require only one signature — from the owner of the private key associated with the TPAY address. However, the TokenPay P2P network supports much more complicated transactions that require the signatures of multiple people before the funds can be transferred. These are often referred to as M-of-N transactions. The idea is that TPAY coins become “encumbered” by providing addresses of multiple parties, thus requiring the cooperation of those parties.



### Ring Signatures

In cryptography, a ring signature is a type of digital signature that can be performed by any member of a group of users that each have keys. Therefore, a message signed with a ring signature is endorsed by someone in a particular group of people. One of the security properties of a ring signature is that it should be computationally infeasible to determine which of the group members' keys were used to produce the signature.



## Dual-Key Stealth Addresses

These addresses are different from the standard addresses commonly used in cryptocurrencies and allow for better privacy. A dual-key stealth address can be shared publicly by the recipient yet any transaction made out to this address cannot be linked back to it. When the stealth address has been revealed to the payer(s), it will enable the payee to receive infinite unlinkable payments. Meaning that each payment to a Stealth address computes a new unused normal address on which the funds ought to be received, any eaves-dropper will be unable to link the two addresses.

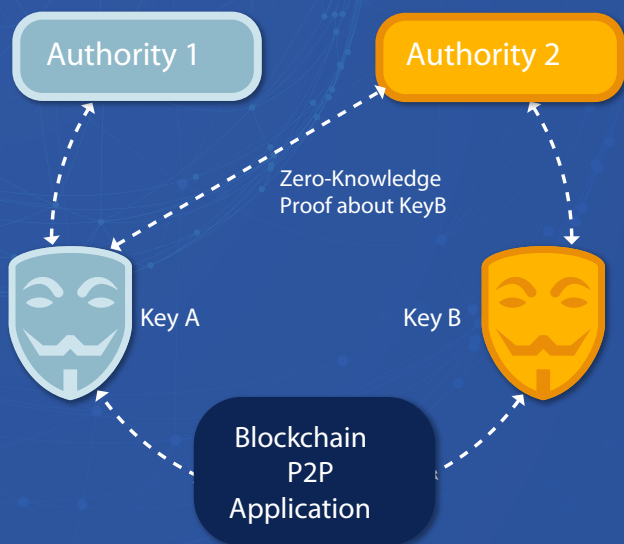
TPAY combines these features available to make the user experience a private and secure one.



## Zero-Knowledge Proof

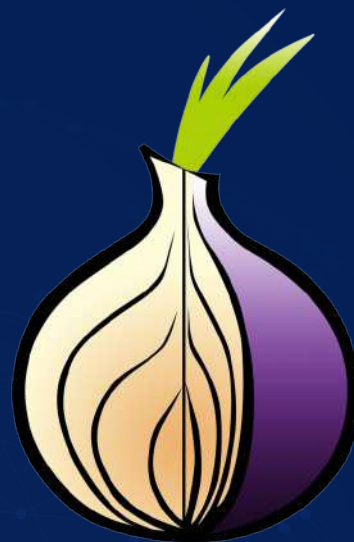
In cryptography, a zero-knowledge proof or zero-knowledge protocol is a method by which one party (the prover) can prove to another party (the verifier) that a given statement is true, without conveying any information apart from the fact that the statement is indeed true.

If proving the statement requires knowledge of some secret information on the part of the prover, the definition implies that the verifier will not be able to prove the statement in turn to anyone else, since the verifier does not possess the secret information.



## Tor Network Integration

Tor is a distributed overlay network designed to anonymize low-latency TCP-based applications such as web browsing, secure shell, and instant messaging. Clients choose a path through the network and build a “circuit”, in which each node (or onion router) in the path knows its predecessor and successor, but no other nodes in the circuit. Traffic flowing down the circuit is sent in fixed-size “cells,” which are unwrapped by a symmetric key at each node (like the layers of an onion) and relayed downstream.



## TokenPay SCI or Secure Communication Interface

TokenPay has incorporated a peer-to-peer encrypted instant messaging system using algorithms to maintain private conversations when using the TokenPay wallets.

All of the messages sent and received are encrypted by the proven AES-256-CBC algorithm and distributed between nodes in such a way as to prevent the recipient's messages from being hacked or viewed by anyone that it was not intended to, even if the hacker can view the entire network and/or run nodes of the network.

To reduce significantly the risk and inconvenience of sharing passwords, we implemented the proven and trusted method of Elliptic Curve Diffie-Hellman or also known as an ECDH key exchange. This level of encryption is at the same level as what governments use for top secret files.



## THE TOKENPAY PROJECT

TokenPay is a blockchain project that incorporates Bitcoin cryptographic technology with advanced security and privacy features. Additionally, TokenPay is building out a platform that combines banking and a closed-end private exchange. This enables wider adoption of the coin via consumer and merchant services. Developing a TokenPay coin and the infrastructure to support its everyday seamless use is a crucial step.

### Why did TokenPay base its Blockchain off of Bitcoin?

In 2008, Satoshi Nakamoto released the whitepaper and source code of the Bitcoin blockchain. Nakamoto's goal was to create a digital currency. One which was not centralized by a government or a federal reserve. It is open source and allows other cryptographers to improve upon the code. As of 2017, various developers have produced many different cryptocurrencies. All claim to have superior technology. However, Bitcoin still dominates the market. Nevertheless, the risk of newer blockchains are prone to security and privacy risks. This is a risk TokenPay is not willing to assume given the critical nature of the application. TokenPay has combined the most secure privacy and security features ever released by leveraging its unique blockchain with a combination of the core Bitcoin source coupled with legacy proven, secure and privacy-focused features.

### Two Fundamental Differences between TPAY and Bitcoin

TokenPay is a Proof-of-Stake system, whereas the Bitcoin network is powered by inefficient Proof-of-Work mining.

TokenPay incorporates additional security and privacy features that are not included in the original Bitcoin blockchain source code.

### Proof-of-Stake is Superior to the Proof-of-Work Mining System

Proof-of-work or PoW is a capital-intensive process to earn Bitcoin. Any entity with the right equipment and knowledge of blockchain can "mine" or earn Bitcoins. The process to mine bitcoin consists of acquiring expensive computers or "mining equipment" that uses the processing power of graphics chips and electricity to solve advanced mathematical puzzles.

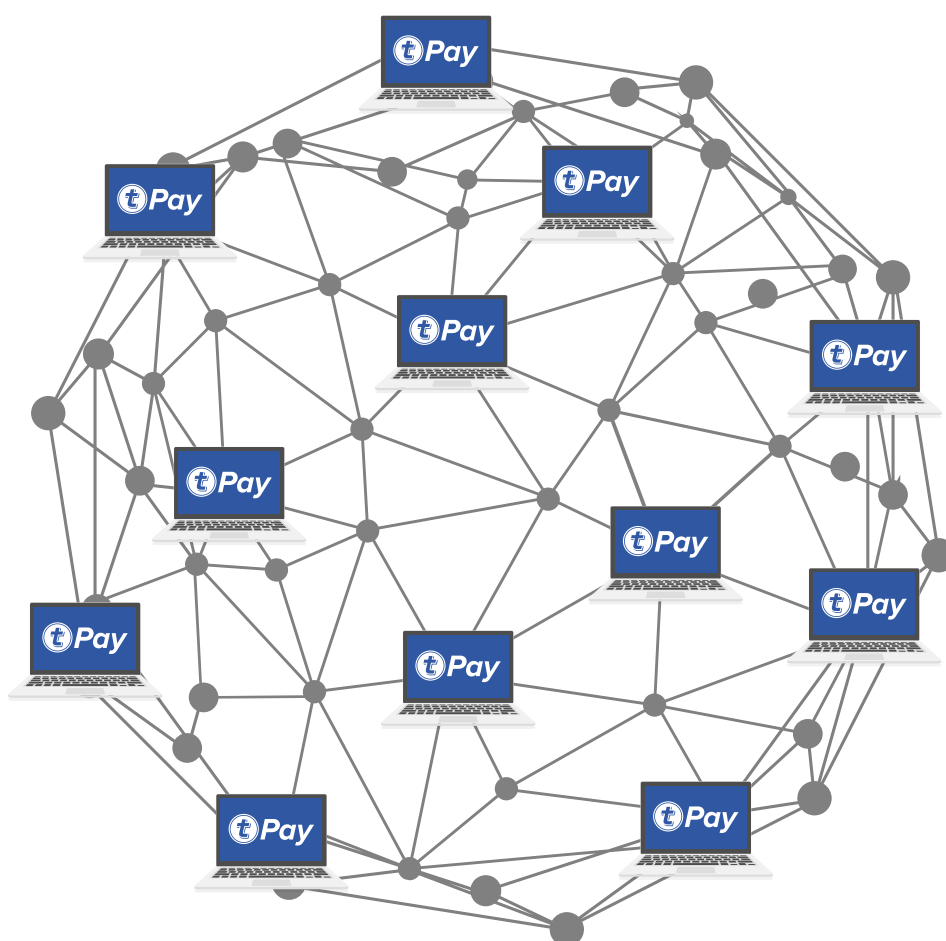
When puzzles are solved, the computers confirm transactions that allow it to earn Bitcoin as its reward. In 2017, the cost of mining a single Bitcoin reached over USD \$1000. As fewer Bitcoins are being made available as rewards the costs will only escalate as mining competition intensifies.



Proof-of-Stake or PoS is a newer form of mining that is referred to as forging. Coins are earned as a function of and by virtue of being held continuously in a digital wallet. PoS is an energy efficient way to earn coins because no specialty mining equipment is needed. All that is required is for the user to have a desktop, laptop or mobile device. The network of processors creates a decentralized mining system. This allows an extension of the blockchain by the user that stakes or holds coins in a wallet. In order to earn additional coins, the user must simply keep the corresponding wallet open. For instance, if a person has a TokenPay wallet running on desktop, the wallet is allocating a percentage of the available processing power to enable the decentralized network to complete a blockchain. The person is then rewarded in additional TPAY coins for allocating processing power to the system.

TokenPay will only have a total of 25 million coins ever produced. This is unlike a centralized fiat currency system where money supply can be increased by human decision. TokenPay is fostering a strong user driven community by allocating 25% of the total coins produced for Proof-of-Stake rewards. The TPAY rewards are given at a distribution rate of 5% per year. Rewards are pro-rated and distributed on a daily basis. A typical user with 100 TPAY in a TokenPay branded wallet will receive 5 coins per year or 0.0137 TPAY per day.

### **Receive Rewards for Powering the Decentralized Network**





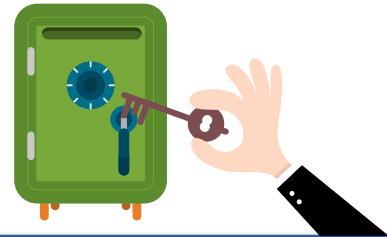
## PROOF-OF-WORK

Vs.

## PROOF-OF-STAKE



THE PROBABILITY OF MINING A BLOCK IS DEPENDENT ON HOW MUCH WORK IS DONE BY THE MINER



PERSON CAN "MINE" DEPENDING ON HOW MANY COINS THEY HOLD



PAYOUTS BECOMES SMALLER AND SMALLER FOR BITCOIN MINERS, THERE IS LESS INCENTIVE TO AVOID A 51% ATTACK



THE PoS SYSTEMS MAKES ANY 51% ATTACK MORE EXPENSIVE



POW SYSTEMS HAVE POWERFUL MINING COMMUNITIES - BUT TEND TO BECOME CENTRALIZED OVER TIME



POS SYSTEMS ARE MORE DECENTRALIZED - BUT MUST WORK HARD TO BUILD COMMUNITIES AROUND THEIR COINS

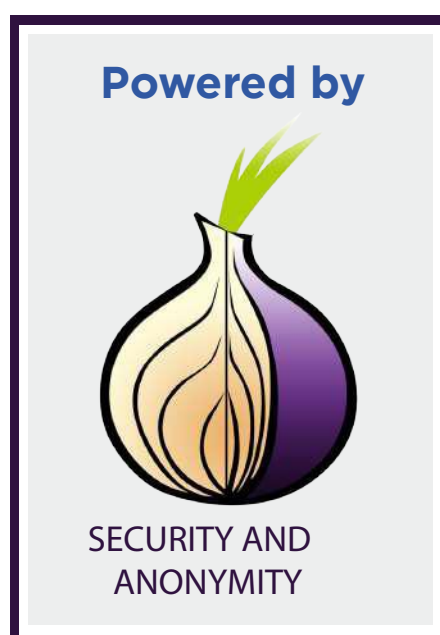
## Complete Tor Network Integration for Maximum Security

The TokenPay project features a complete client-side implementation of the Tor network. This was implemented in order to provide absolute anonymity when conducting secure TPAY network transactions. According to Tor community developers "Tor is a distributed overlay network designed to anonymize low-latency TCP-based applications such as web browsing, secure shell, and instant messaging. Clients choose a path through the network and build a circuit, in which each node (a.k.a., onion router) in the path knows its predecessor and successor, but no other nodes in the circuit. Traffic flowing down the circuit is sent in fixed-size cells, which are unwrapped by a symmetric key at each node (like the layers of an onion) and relayed downstream". Essentially, Tor provides transport layer anonymity for TPAY transactions.

For instance, take Amy for example. In a typical cryptocurrency transaction Amy wants to make a real life product purchase with Bitcoin. So, Amy would have to broadcast her transaction to a few bitcoin supernodes. The Tor developers explain:

“Those nodes then propagate the transaction further to the rest of the bitcoin network until it becomes recognized. If Alice did not use Tor to conduct her transaction, those initial supernodes trivially learn the IP address of Alice. Furthermore, since the Bitcoin blockchain is a public log of transactions, analysts could match her newest transaction with her previous transactions and just follow the money trail. These are commonly used techniques borrowed from the Internet surveillance realm, known as traffic analysis. Traffic analysis can be used to infer who is talking to whom over a public network.”

Clearly knowing the source and destination of Internet traffic allows others to track user behavior and interests. Similarly, enterprising organizations have been data mining social analytics of the bitcoin blockchain since inception. Therefore, it should be no surprise that most Bitcoin clients provide user options like conducting secure transactions via the Tor network. Developers of Tor say that “by routing traffic over Tor, no one learns the origin IP address of Alice when she performs the bitcoin transaction.” Some Bitcoin wallets support and use Tor, such as Electrum and Armory.



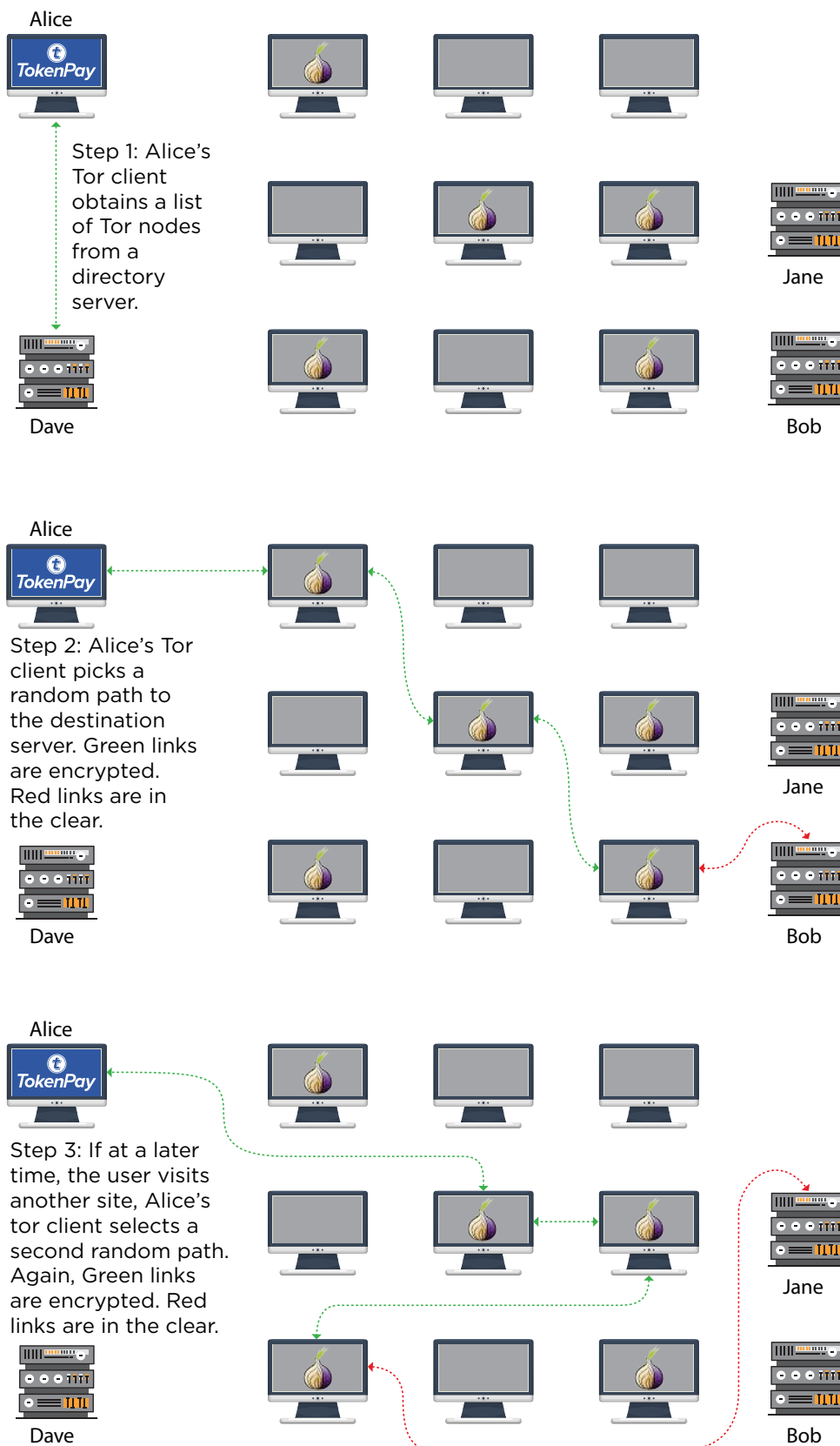
## How the Tor Network Works



Tor node

Unencrypted link

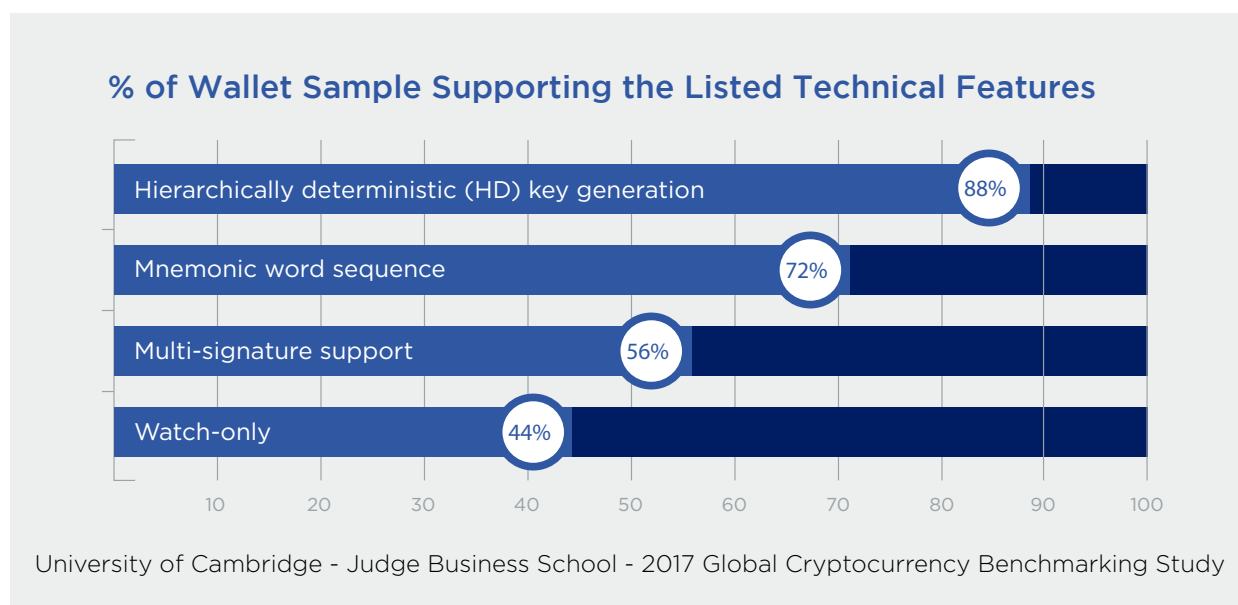
Encrypted link



## Multi-Signature Transactions

A custom built 2-of-3 multi-signature address substantially fuels the robust TokenPay Multi-signature Transaction Engine (MTE). This advanced digital protocol protects TPAY users. This works because each party must approve the transaction before the corresponding data is published on the TPAY blockchain.

Unlike a traditional payment service that uses numerous intermediaries, there is no centralized handling of user funds with a multi-signature platform. Participants generate pairs of private keys and public addresses. While the private keys are kept secret, users freely distribute the public addresses.



Accordingly, wallets have evolved from simple software programs handling only key management. TokenPay wallets are sophisticated applications that offer a variety of features. Significant innovation at both the protocol level and amongst wallet providers has led to the emergence of several breakthrough technical standards like multi-signature which forms a critical element of the TokenPay wallet security ecosystem.

Multi-signature, in general, refers to requiring more than one key to authorize a transaction. It is used to divide up responsibility for possession of coins. Accordingly, standard transactions on the coin network could be called “single-signature transactions,” because transfers require only one signature. This is provided by the holder of the private key associated with the coin address. However, in order to maintain optimal network integrity of the wallet and its assets, TokenPay naturally has implemented the most advanced security features. Because private keys can be stolen, this would typically result in unauthorized access to digital assets. TokenPay’s MTE system will prevent this theft from occurring.

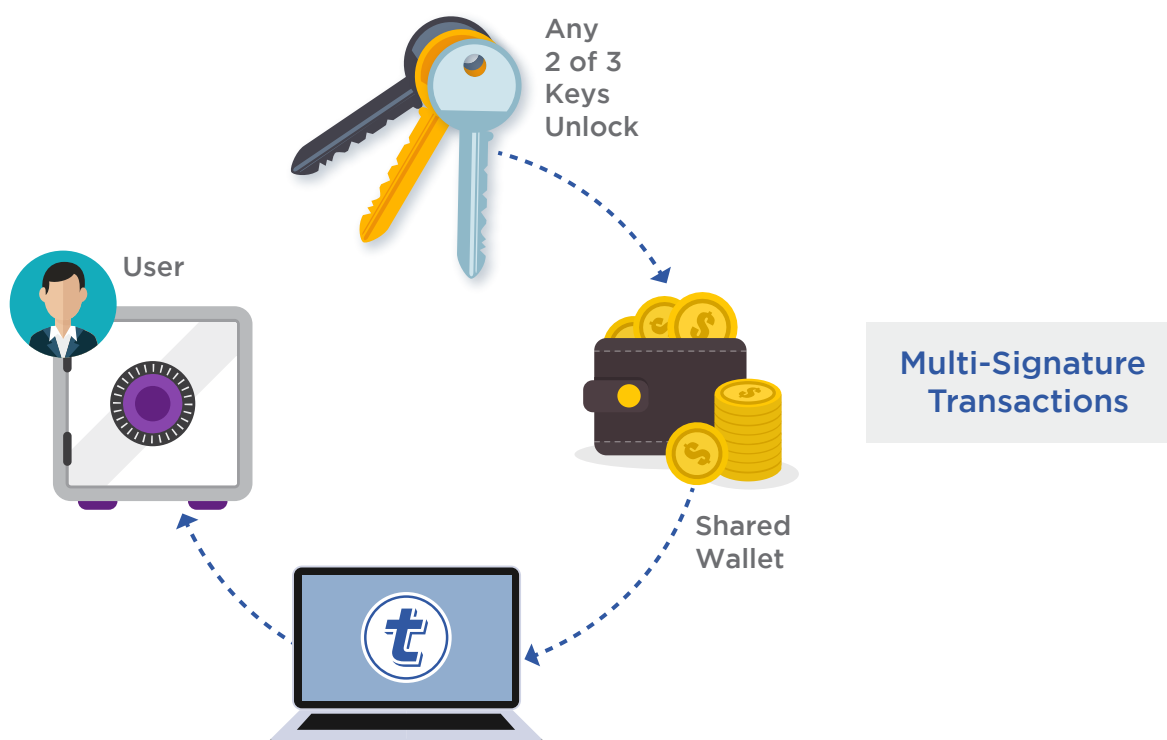
This technique of multi-signature transactions adds a significant layer of security. Multiple signatures are needed to release funds. This protects all parties conducting transactions with TPAY. This can be referred to as an M-of-N transactions. The idea is that the TPAY coins become “encumbered” by

providing addresses of multiple parties. The cooperation of all parties is required to fully execute the transaction. There can be several types of multi-signature applications but the most common one is called 2-of-3. This is typical of a buyer-seller escrow. The escrow agent is not able to misappropriate funds or assets because a buyer commits money into a transaction with the seller and a third-party arbitrator.

For instance, If a TPAY P2P transaction goes smoothly, then both buyer and seller sign the transaction in order forward the money to the seller. If something goes wrong however, the parties can sign a transaction to refund the buyer. But if the parties cannot agree, an appeal is made to the third-party who will arbitrate and provide a second signature to the party that it deems deserves it.

To further protect all users, TokenPay has enabled a system where one private key is on a user's computer and the other can be on mobile for example. Accordingly, funds cannot be spent without a signature from both devices. Therefore, for an attacker to steal funds, access must be gained to both devices. Clearly this is much more difficult than gaining access to a single device. For this reason the TokenPay MTE is considered to be an extremely advanced security protocol. But some multi-signature applications and wallets that support them are not infallible.

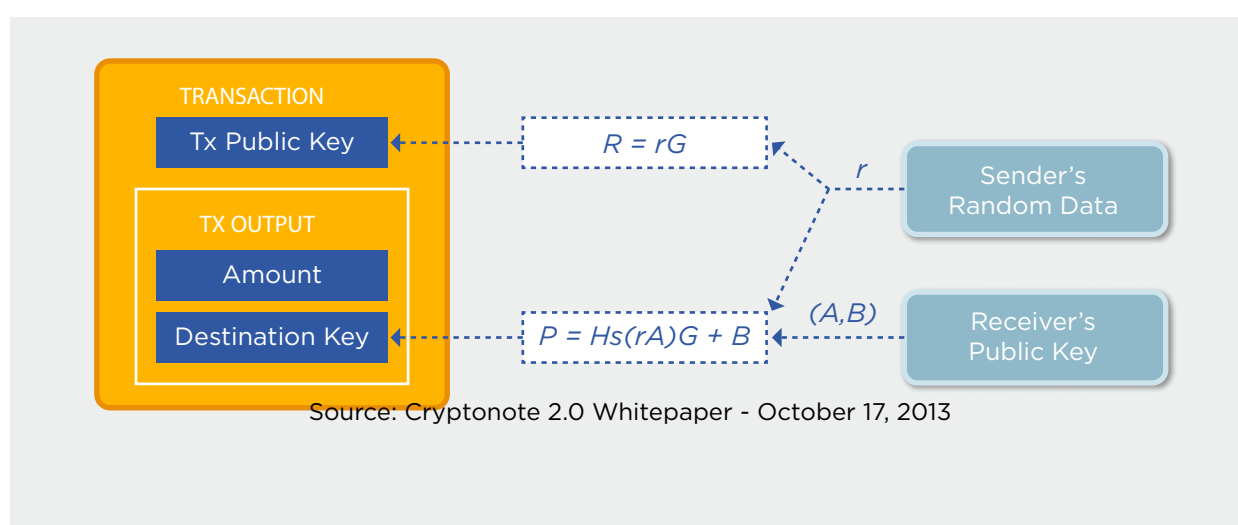
There have been reports of traditional multi-signature wallets being compromised in the past. This has happened mainly due to weak underlying infrastructure not being properly maintained. This has exposed key security flaws. Attackers have been able to obtain access to two of the three keys needed for entry and employ social engineering designed to compel the final holder to release the key. TokenPay is not subject to these security flaws because it has an infallible system which incorporates the most advanced and unbreakable hacker-proof countermeasures.





## Dual-Key Stealth Addresses

Stealth addressing is when a sender takes a public address from a recipient and transforms it to a one-time address. This is publicly unlinkable to the original public address and to any other one-time address. Only the recipient can link all of the payments together. Furthermore, only the recipient can derive the secret key associated with the one-time address. By using the stealth addressing protocol, a recipient can publish one address and receive unlimited publicly unlinkable payments. Dual-key stealth addresses add another layer of security. The TokenPay platform incorporates dual-key stealth addresses. This refers to the pairs of spend/view keys. It allows "decoding" (or removing the unlinkability) stealth addresses without simultaneously allowing them to be spent. This is the ultimate in settlement security and anonymity and it is standard when transacting in TPAY.



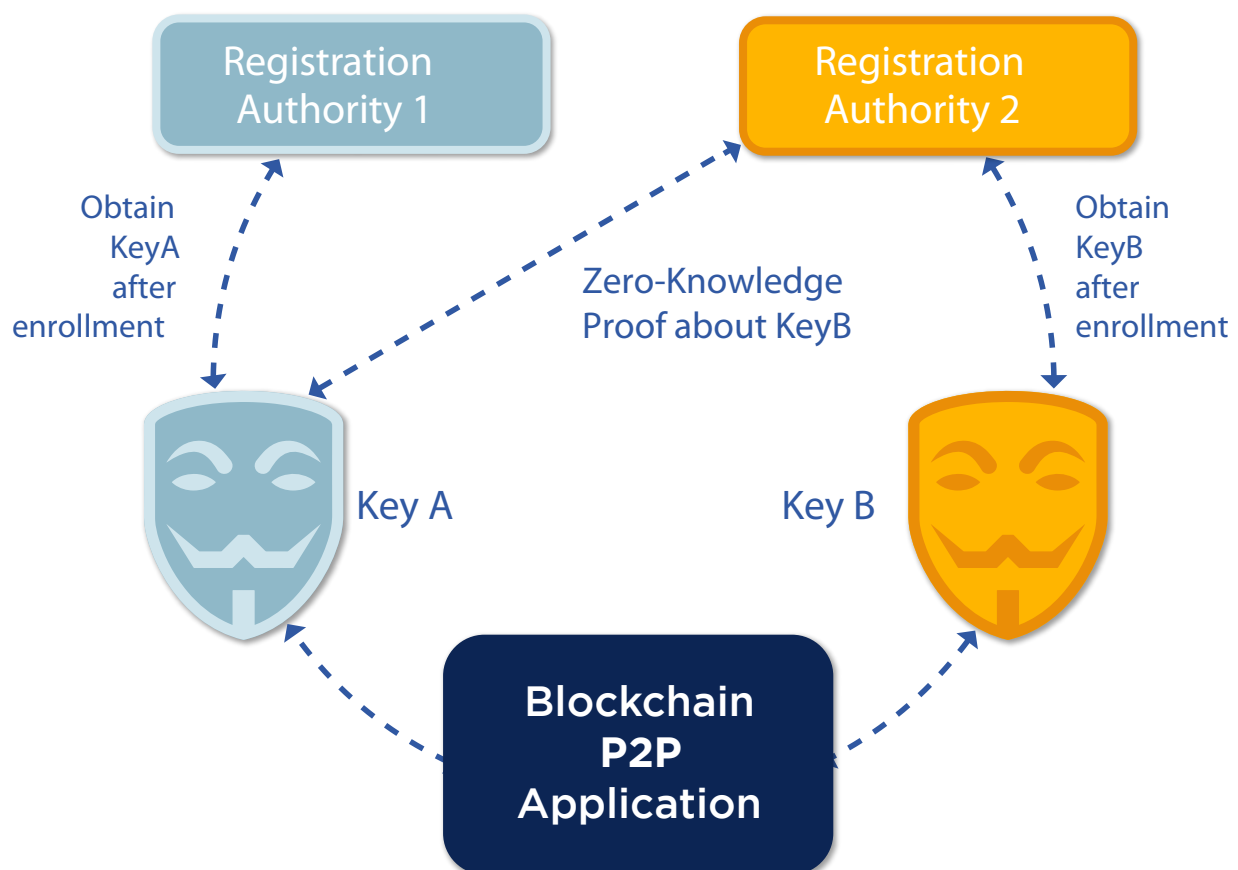
Simply put, the TPAY dual-key stealth address can be shared publicly by the recipient but any transaction made out to this address can not be linked back to it. It is completely anonymous. When the stealth address has been ultimately revealed to the payer, it will enable the payee to receive infinite unlinkable payments by TPAY. That means that each payment to a stealth address computes a new unused normal address on which the funds are to be received.

For instance, a potential hacker or eavesdropper will be unable to link the two addresses involved in the transactions. In the figure above  $P = Hs(rA)G + B$  is depicted. In this image,  $P$  is the final stealth address (one-time output key, the destination where funds will actually be sent),  $Hs$  is the hashing algorithm that returns a scalar,  $r$  is the new random scalar we chose for this transaction,  $A$  is the receiver's public view key,  $G$  is the standard Ed25519 base point (the EdDSA signature scheme), and  $B$  is the receiver's public spend key.

## Zero-Knowledge Proof

When a TPAY blockchain transaction is initialized, all parties sign with the corresponding private key. This signature acts as the analogous action for a particular public address. The transaction becomes fully executed because all parties on the blockchain can then verify these signatures using the public addresses. There is no need for a TokenPay user to reveal their private key to anybody. As a result, TPAY transactions are conducted with complete security, anonymity and without any counterparty risk typical of a conventional payment platform.

In cryptography, a zero-knowledge proof or zero-knowledge protocol is a method by which one party (the prover) can prove to another party (the verifier) that a given statement is true, without conveying any information apart from the fact that the statement is indeed true. A zero-knowledge proof is one which demonstrates the truth of a certain statement. That is, without revealing any additional information beyond what it's trying to prove. Zero-knowledge proofs in blockchains apply a similar principle: it aims to prove the statement “this transfer of assets is valid,” without revealing anything.



Proving that one party knows certain information is trivial if the user is allowed to reveal that information. It becomes a challenge to prove that one has this knowledge without revealing what the secret information is. For the TokenPay zero-knowledge proofs of knowledge, the protocol requires interactive input from the verifier. Accordingly, a challenge occurs whereby the responses from the prover are used to convince the verifier if the statement is actually true. That is if the prover does indeed have this claimed knowledge. If not, the verifier could record the execution of the protocol and repay it to another party.

If the new party accepted this as proof that the paying party knows the secret information, then the new party's acceptance is justified. That is, the re-payer does know the secret information. This means that the protocol leaks knowledge and is not zero-knowledge, or it is spurious. The result leads to a party accepting someone's proof of knowledge which does not possess it. Some forms of non-interactive zero-knowledge proofs of knowledge exist, but the validity of the proof relies on computational assumptions. This is typically the assumptions of an ideal cryptographic hash function, such as what TokenPay has integrated in to the TPAY blockchain.

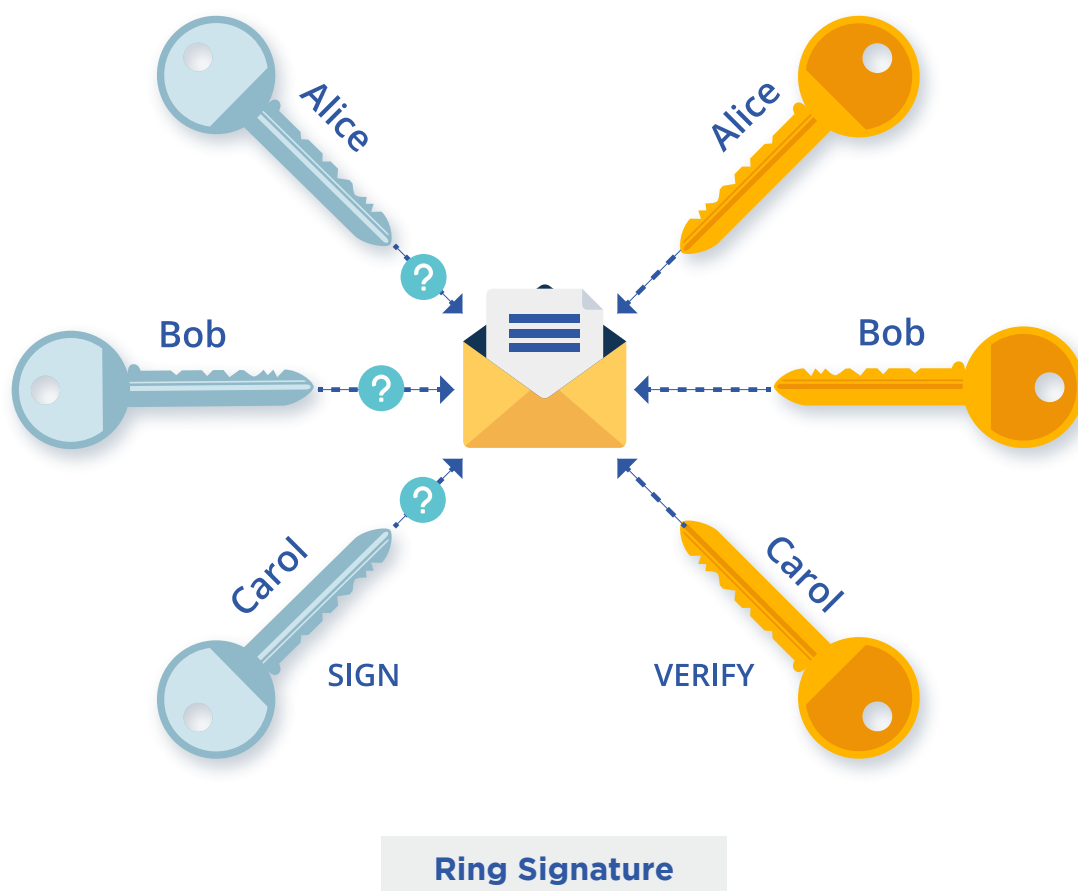
## Ring Signatures

Ring signatures enable a TokenPay user to sign a message so that a ring of possible signers (of which the user is a member) is identified. This is done without revealing exactly which member of that ring generated the signature. It is a type of digital signature that can be performed by any member of a group of users that each have keys. A message signed with a ring signature is endorsed by someone in a group of people. One of the security properties of a ring signature is that it should be computationally infeasible to determine which of the group members' keys were used to produce the signature. In contrast to the common standard group signatures, the TPAY ring signatures are completely decentralized and do not require any central authority or coordination among the various users. Indeed, those who transact in TPAY do not even need to be aware of each other. Furthermore, ring signatures grant TokenPay platform users granular control over the level of anonymity associated with any particular signature.



A main feature of ordinary digital signatures typical of most cryptocurrencies is that the signer needs a single secret key, but a verifier cannot establish the exact identity of the signer. If for example, one encounters a ring signature with the public keys of Alice, Bob, and Carol, the user can only claim that one of these individuals was the signer. However it would be impossible to whom exactly. However, digital transactions sent to the TokenPay network are untraceable by virtue of using the public keys of other members in the ring signature. Of course one of which will apply to the transaction. This way it can be proven that the creator of the TPAY transaction is eligible to spend the amount specified in the transaction.

Furthermore, the identity of the creator will be indistinguishable from the users whose public keys were used in the creation of the ring signatures. It should be noted that foreign transactions do not restrict people from spending their own money. A public key may appear in dozens of other ring signatures. But this is only done as a muddling factor even if a person has already used the corresponding secret key for signing the transaction. Moreover, if two users create ring signatures with the same set of public keys, the signatures will be different unless they use the same private key. This assures maximum security and anonymity for all TPAY network transactions.



## TokenPay SCI or Secure Communication Interface

TokenPay has incorporated a peer-to-peer AES-256 encrypted instant messaging system using algorithms to maintain private conversations when using the TokenPay wallets. The system works on the desktop wallets and is the absolute pinnacle in secure P2P communication.



## Elliptic Curve Diffie-Hellman Key Exchange P2P Messaging

All of the messages sent and received are encrypted by the proven AES-256-CBC algorithm and distributed between nodes in such a way as to prevent the recipient's messages from being hacked or viewed by anyone that it was not intended to, even if the hacker can view the entire network and run nodes of the network.

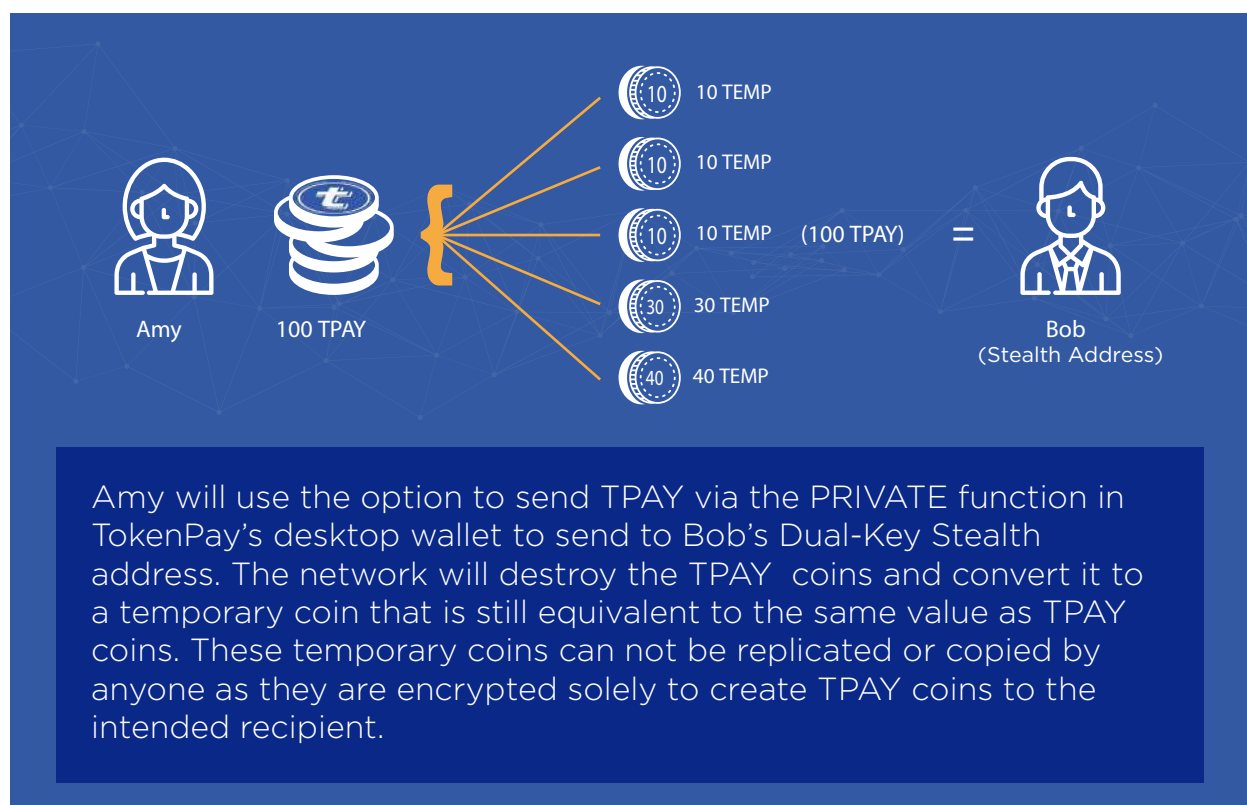
To reduce the risk and inconvenience of sharing passwords, TokenPay has implemented the proven and trusted method of Elliptic Curve Diffie-Hellman or also known as an ECDH key exchange. This level of encryption is at the same level as what a government security agency would use to protect top secret files and documents.

The Elliptic Curve Digital Signature Algorithm or ECDSA is used to provide confidence that the messages being transmitted arrive at the intended destination. Messages are distributed over the existing TokenPay peer-to-peer network, and a copy of each encrypted message is stored on each node for 48 hours. Following this period, the messages are permanently deleted with no chance of retrieval by any party.



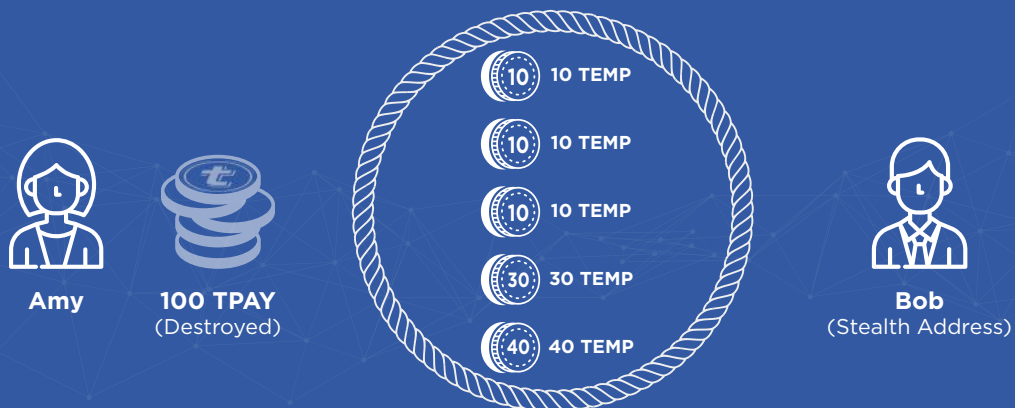
## Practical Uses of the Blockchain Technology

TokenPay's blockchain and integrated technology allow users the ultimate private, secure method of conducting transactions and communication. Below is a real-life example of how the TPAY coin technology can be used.





After this process is initiated the TPAY coins will no longer be TPAY but a temporary coin of which will carry no value until it has been received or used by the intended recipient. Then, the amount of 100 TPAY coins gets split up to random amounts that are never the same. So, if you send 100 TPAY coins it could be then split up into 5 transactions or more with each one having different amounts that will still add up to the 100 TPAY coins.



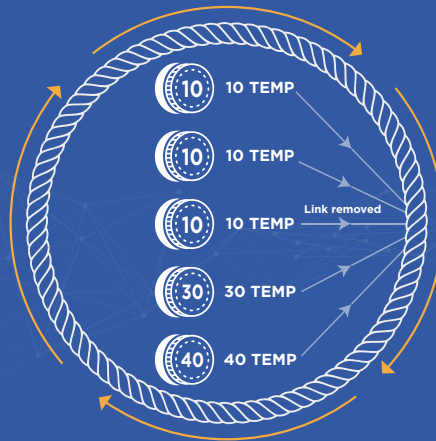
incorporate the members of the ring signature. Zero-Knowledge proofs are used when sending TPAY coins as each address that the coin is sent to, represents the coin itself.



**Amy**



**100 TPAY**  
(Destroyed)



**Bob**  
(Stealth Address)

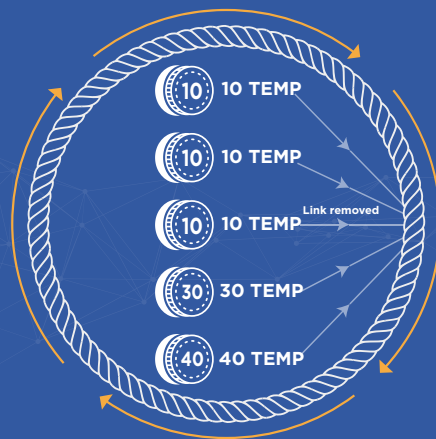
The TPAY coins are sent to the Dual-Key stealth addresses which removes the link between the parties. It is not possible to determine which coins have been spent, so all tokens remain in the blockchain as spendable.



**Amy**

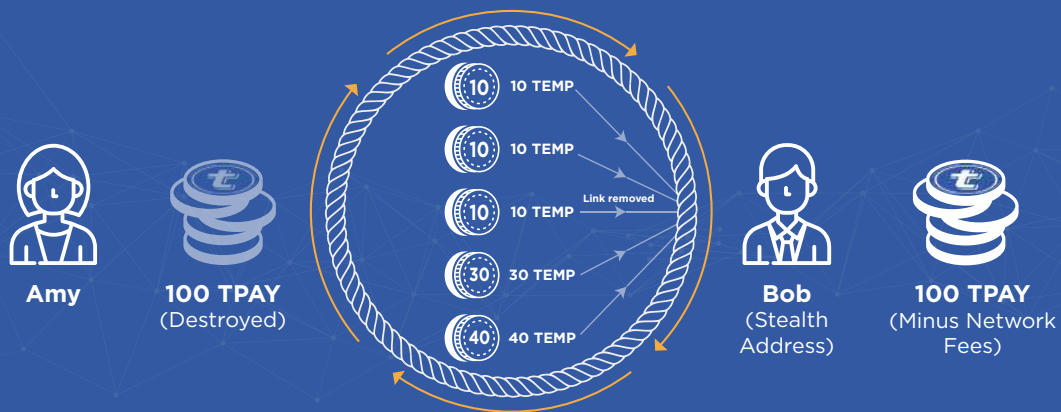


**100 TPAY**  
(Destroyed)

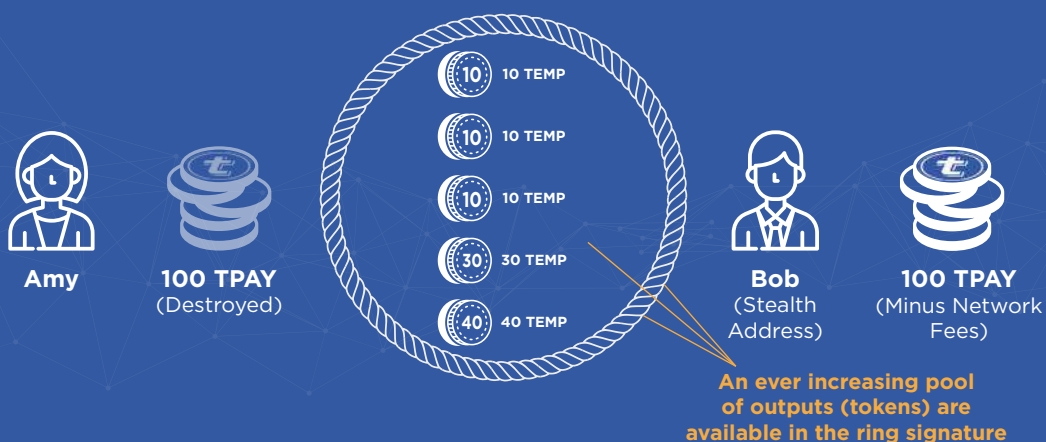


**Bob**  
(Stealth Address)

Bob now wishes to convert these temporary TPAY coins into real TPAY so the network signs the transaction with a ring signature which removes the traceability.



The network now converts the temporary TPAY coins to the 100 TPAY coins that Amy had originally sent (minus any network fees). Remember, TPAY coins are only spendable by providing a traceable ring signature to prove ownership of the coin via the Stealth Address. Ownership of the address proves the rights to the coins. Since we are using a Zero-Knowledge proof in our ring signature we will not reveal any information to anyone.



Nevertheless, what makes this unique is that when the coins are in Temporary coin mode not all of the coins have to be converted to Bob. Bob could choose to convert some today or some 2 weeks from now which essentially makes it virtually impossible for anyone to be able to link which transaction happened and on what date and for how much from the original transaction Amy sent.

The onlooker Jane can not establish a link between the two parties and thus has zero-knowledge of the transaction



The original TPAY was destroyed leaving no connection to the new TEMP coin.

The new TPAY Bob has received has no link or traceable connection to the TEMP or the original TPAY that was destroyed.

In conclusion, the original TPAY coins that were sent from Alice are no longer in her possession. Jane is unable to know how many coins were sent to Bob while Bob was able to receive those coins.

## TPAY is Bitcoin on Steroids

Transacting in TPAY is infinitely more secure and anonymous than with Bitcoin. It is uniquely privacy feature packed with multi and ring signatures, dual-key stealth addresses, zero-knowledge proofs, unbreakable Tor network integration and its own closed-end secure communication interface. TPAY users enjoy full anonymity when exchanging tokens and trading with other platform users. For this reason, TPAY has been colloquially referred to as the “Bitcoin on Steroids.”

























## THE COMPETITIVE LANDSCAPE OF BLOCKCHAIN TECHNOLOGY

### TokenPay Digital Wallet Users Generate TPAY Coin Rewards

The TokenPay secure SHA-256 encrypted wallets deploy next generation technology that is fully integrated with the TPAY proprietary blockchain. TPAY is a Proof-of-Stake coin. It distributes rewards to network holders that use the wallet. The decentralized network expands virally by leveraging the processing power provided by TPAY holders' graphics cards. This amplification is powered by the TokenPay desktop wallet holders.

Network Architecture					
					
Proof-of-Stake					
Proof-of-Work					
Bitcoin Based					
Yearly Reward Interest	5%	0%	0%	0%	0%

### Bitcoin Network uses Antiquated Proof-of-Work Mining














































Antiquated systems, like those employed by Bitcoin itself, use traditional network mining called Proof-of-Work. Whereby the rewards are only distributed to the first to find a solution for the mathematical problem that concerns the subject candidate block. This is a mathematical problem that cannot be solved in any way other than through brute force. When a miner finally finds the right solution, it is announced to the whole network at the same time. Only this miner receives the digital token prize provided by the protocol. Accordingly, mining requires a huge number of attempts and is wholly inherently inefficient by design.

### Multi-Screen Digital Wallet is Decentralized and Incentivized

TokenPay features a multi-screen densely encrypted wallet that is fundamentally driven by the most secure core blockchain technology ever introduced. TPAY tokens can be held and transacted within the wallet itself. Platform users engage in secure communications by way of the embedded live engagement platform. The actual TPAY token is Proof-of-Stake driven. This means that TPAY holders earn a prorated daily 5% per year bonus of TPAY coins for simply leaving one of the licensed wallets open. The open wallet acts as a generator engine by leveraging the immense processing power of the graphics card across the network of all TPAY holders. This set of actions allows TPAY to expand its decentralized network and it rewards its holders in kind for providing valuable processing power.

## **Pay Blockchain is Based on Bitcoin**

Since its launch in 2009, Bitcoin was developed and designed to operate as a transaction settlement network. It is, therefore, the logical platform destination for payment processing based coins. Bitcoin is also viewed as a haven asset similar to gold. Bitcoin is deflationary and scarce. Rival network Ethereum, on the other hand, is inflationary and abundant. Its network infrastructure is driven almost entirely with the purpose of facilitating the growth of decentralized applications (DApps). Its native ETH token was never designed to operate as a digital currency, only to be used to fund DApps running on the Ethereum protocol.

Anonymity Features					
					
Stealth Addresses					
Ring Signatures					
Zero Knowledge Proofs					
Untraceable					
Unlinkable					
End to End Anonymity					
Secure Chat					
Tor Network Integration					

- TPAY is the only coin to provide the ultimate privacy of confidential ring transactions at the protocol level coupled with zero-knowledge proofs, stealth addresses, encrypted chat and a full Tor network integration. Other coins have combined some of these features, but only TPAY has unified all of them in a single unbreakable platform.
- Monero features the most impressive privacy profile absent of TPAY, but it lacks Tor network integration and the embedded secure communications interface where TPAY users enjoy the real-time encrypted chat.
- It is interesting to note that Bitcoin itself, along with the supposedly secure Dash token, have no advanced security features.
- ZCash is widely considered to be a highly secure and anonymous coin, but it is linkable and falls short by not having true end to end anonymity.

## TOKENPAY TECH SPECIFICATIONS

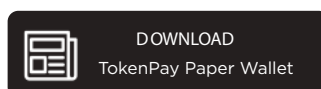
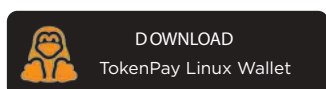
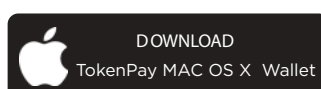
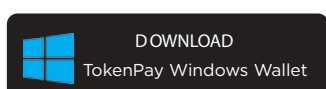
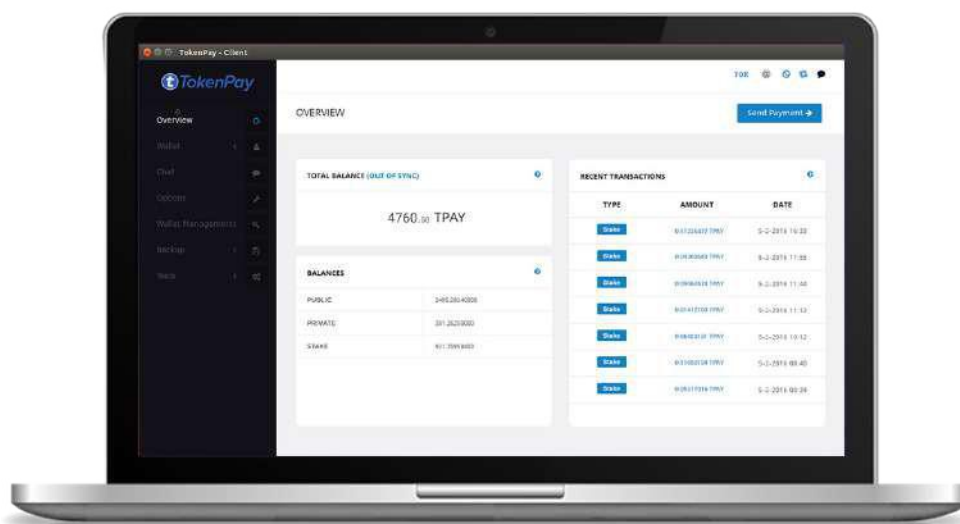
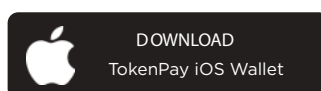
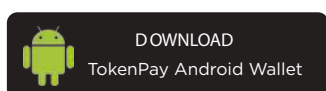
SPECIFICATION	VALUE	EXPLANATION
Protocol	PoSV3	PoS means Proof-of-Stake which is the method TokenPay has used
Block Time	60 Seconds	Block Time is the amount of time it takes to complete a block in the blockchain.
Difficulty Re-target	10 minutes	Difficulty retarget when the chain decides to alter its difficulty depending on how many people are staking or mining.
Nominal Stake Interest	5% Annually	Nominal Stake Interest is the amount of TPAY coins.
Minimum Stake Age	2 Hours (no max age)	Minimum Stake Age means the minimum amount of hours a desktop wallet has to be running to claim any rewards. Keep in mind that a mobile wallet or exchange that holds TPAY coins will not be eligible for staking rewards.
P2P Port	8801	TokenPay's Peer to Peer port allows connections between peers.
RPC Port	8800	TokenPay's Remote Procedure Call Port is to allow connections to our server.
Blockchain Explorer	Website	<a href="http://explorer.tpay.ai">http://explorer.tpay.ai</a> allows anyone to view public ledger transactions on the

### Transactions

SPECIFICATION	VALUE	EXPLANATION
Minimum Fee	0.0001 TPAY	This is the fee that will be charged for every transaction made on the blockchain but is not a fee that TokenPay would receive it is essentially burned
Confirmations	6 Blocks	This is how many times in the network a transaction has to be confirmed before a transaction can be approved.
Maturity	100 Blocks	this is the number of transactions it would take to complete a block in the blockchain.

## TOKENPAY SECURE MULTI-SCREEN ENCRYPTED WALLETS

TokenPay's secure encrypted wallets employ breakthrough Proof-of-Stake automation technology that is powered by the fully decentralized TPAY blockchain. Desktop wallet users receive rewards for simply leaving the wallet open. The processing power of the computer graphics card drives the TPAY settlement engine. This is a decentralized network, powered entirely by its users.

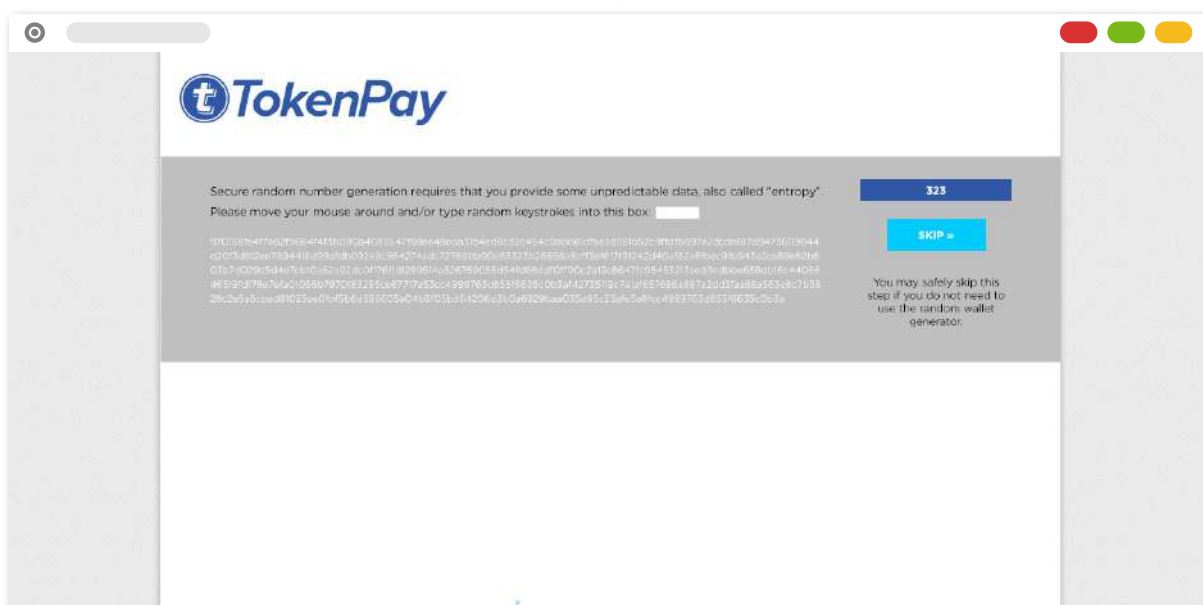


In order for TokenPay coin holders to take advantage of all of these security features they must download our wallet.

## TOKENPAY BRANDED PAPER WALLET AND KEY GENERATOR

While the various TPAY digital wallets define the pinnacle of advanced security protocol, many still consider the paper wallet's cold storage system to be the most heavily guarded digital token cache. In a literal sense, the TokenPay Paper Wallet is a physical document that contains all of the necessary data that is required to generate the essential TPAY private key. This can be the most secure way of storing TPAY because the wallet is not exposed to malware. It can be stored in a private safe.

The private key is generated by the user on the highly secure TokenPay server. It is recommended that users disconnect from the internet when in the process of generating a private key. This way the paper wallet generator is considered to be truly self-contained and the keys are not being transmitted online. TokenPay regularly audits and verifies the integrity of the client-side private key generator that it offers on its website.

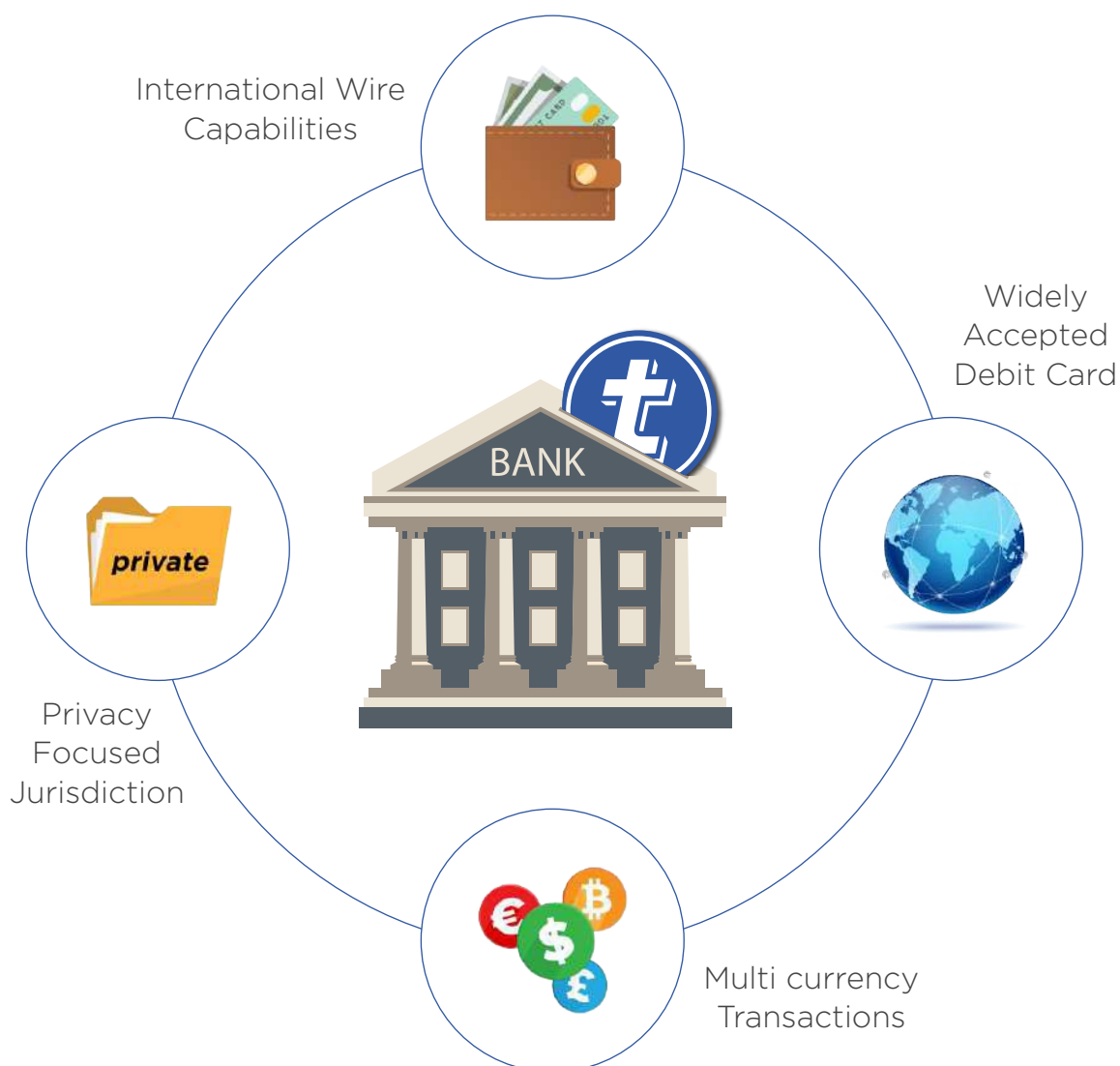


## LICENSED INTERNATIONAL BANK INTEGRATION

Although the TPAY core is defined by the blockchain, there also exists a uniquely critical banking element. TokenPay has plans to form a new bank charter, partner or acquire a licensed bank in Vanuatu. One such current negotiation is with a bank that has a great reputation and all the necessary relationships to make international transfers possible. This bank also has a relationship with Mastercard through an affiliate. As TokenPay wants to cater to cryptocurrency customers by tailoring the compliance department around this theme, this is a crucial first step.

The creation of a a bank that is fully committed to customers with cryptocurrencies is utopian. TokenPay intends to offer traditional banking services with regulatory oversight and fiduciary status. AML and KYC procedures will apply the same, as with customers with fiat currencies. TokenPay plans to operate in the Hong Kong dollar which is pegged to the USD. Most desirable is the partnership or acquisition of a bank that has many of the existing correspondent banking relationships that are necessary to transact in major currencies.

### Benefits of Acquiring a Bank





## Privacy Focused Jurisdiction

Vanuatu banking is an interesting and innovative option for the first bank that caters exclusively to the cryptocurrencies community. This jurisdiction is privacy-focused and has no fiscal treaties. Although it has signed agreements for the exchange of information with Australia, Denmark, Faroe Islands, Finland, France, Granada, Iceland, Ireland, South Korea, New Zealand, Norway, San Marino and Sweden. A domestic law operates in Vanuatu for impeding money laundering. This establishes cooperation with investigators in certain circumstances. However, most importantly, bank secret is guaranteed. Tax evasion is not a punishable crime because there are no taxes in Vanuatu.

TokenPay cannot mention the bank by name as there is a non-disclosure agreement in place. But the institution has a robust online banking platform where customers use a digipass to access accounts. TokenPay plans to further integrate the banking platform with a closed-end private exchange for clients. The objective is to receive liquidity in the major crypto assets, including TPAY which will serve as the backbone of the banking system. There will be an online banking platform where customers can switch between currencies with one click and pay the market rate. The plan is to integrate with exchanges to provide liquidity through the respective APIs in the beginning until the platform can reach a critical mass where transactions can be cleared in-house.

Banking clients will have the ability to apply for and be issued debit cards. This will likely occur through the pre-existing relationship this bank has with a Mastercard affiliate. Rates will be typical banking rates. As TokenPay will be a licensed and regulated bank in Vanuatu, it will offer insured wallets, and at some point, the plan is to offer actual physical storage in private vaults for high net worth clients. This is unique in the market and promotes the seamless intersection of cryptocurrency with fiat currency.



**This is NOT an actual picture of the TokenPay Bank. This is for illustration purposes only.**

## INTERNATIONAL MULTI-CURRENCY CRYPTO DEBIT CARD

The concept behind the fully integrated BlueDiamond debit card is that it will be easy to load given its direct connection to the TokenPay digital wallets. Therefore, spending can be done virtually or at any point-of-sale merchant either online or in person. Additionally, the international debit card allows instant access to multi-currency funds at network automated teller machines. Transparent pricing and low fees make the BlueDiamond debit card a very attractive mechanism for cashing out digital tokens to enable hard asset purchases.

A user's digital tokens like TPAY or Bitcoin can be accessed whenever needed thanks to the closed-end real-time private exchange that will be part of the TokenPay banking platform. Accordingly, there is no need for the user to have to convert exact quantities of digital tokens to conduct a fiat transaction.

This will allow TokenPay clients the ability to maintain unfettered access to cash at thousands of automated teller machines worldwide and millions of physical and online merchants.



It is important to note that the Mastercard logo on the BlueDiamond card rendering is the intellectual property of Mastercard International. Furthermore, TokenPay does not have any deal currently in place with Mastercard or any other credit or debit card provider. The intention is that TokenPay will enter into a card services relationship with either Mastercard or Visa. TokenPay intends to aggressively pursue opportunities to directly engage in a business relationship with a major debit card provider.

## TokenPay BlueDiamond Cardholder Benefits

TOKENPAY BLUE DIAMOND CARD	USD
Physical card issuing fee	\$15
Virtual card issuing and Annual fee	Free
Physical card Annual fee	Free (\$10 if less \$1,000 yearly spend)
Domestic and Foreign exchange fee	Free
ATM withdrawal in domestic currency	0%
ATM withdrawal in other currency	\$3
Shipping of physical card	\$5
ATM withdrawal in other currency	3 to 4 Weeks
Expedited shipping	\$70



### Low Cardholder Fees:

TokenPay will provide some of the lowest fees in the industry to make sure owning and using the BlueDiamond card.



### Global ATM Access--:

With the BlueDiamond card you will be allowed to access ATM's all over the world. TokenPay understand that crypto holders are the most well-travelled in the world.



### Real-time Conversion:

When transactions are made via the BlueDiamond card it will automatically convert to the currency of the merchant.



### Multi-currency Support:

TokenPay will allow transactions in cryptocurrency and fiat linked to the BlueDiamond card. Users will be able to setup a default currency



### Blue Diamond Card Purchase Rewards:

All transactions paid with TPAY will receive a 1% "crypto-back" reward.

## PAYMENT PROCESSING SERVICES FOR ONLINE MERCHANTS

TokenPay's merchant services division offers businesses around the world the opportunity to transact with TPAY as well as other cryptocurrencies. All of this is possible with the integration of our planned bank and exchange to provide liquidity. Businesses will have the flexibility to convert crypto to fiat. Also, fees for merchants will be as low as 0.25%. Merchants accepting TPAY will save more than 90% from traditional merchant service options.



### Industry Low Transactions:

Merchants today pay up to 5% a sale to receive payments via a debit or credit card. TokenPay's merchant services will allow merchants to accept TPAY coins for free for the first 1 year and then an industry low 0.25% per transaction with no monthly fees.



### Daily Cash Settlements:

Cash is king and businesses that sign up with TokenPay will be able to receive daily cash settlements.



### Customizable Branded Checkout:

TokenPay will make easy and simple to not only integrate your existing shipping cart given the API's or plugins we will have available for you to select.



### Point to Click Integration:

Once the API has been integrated with your business consumers will simply see a checkout button ready to make the transaction as seamless as possible.



### Advanced Security Protocols:

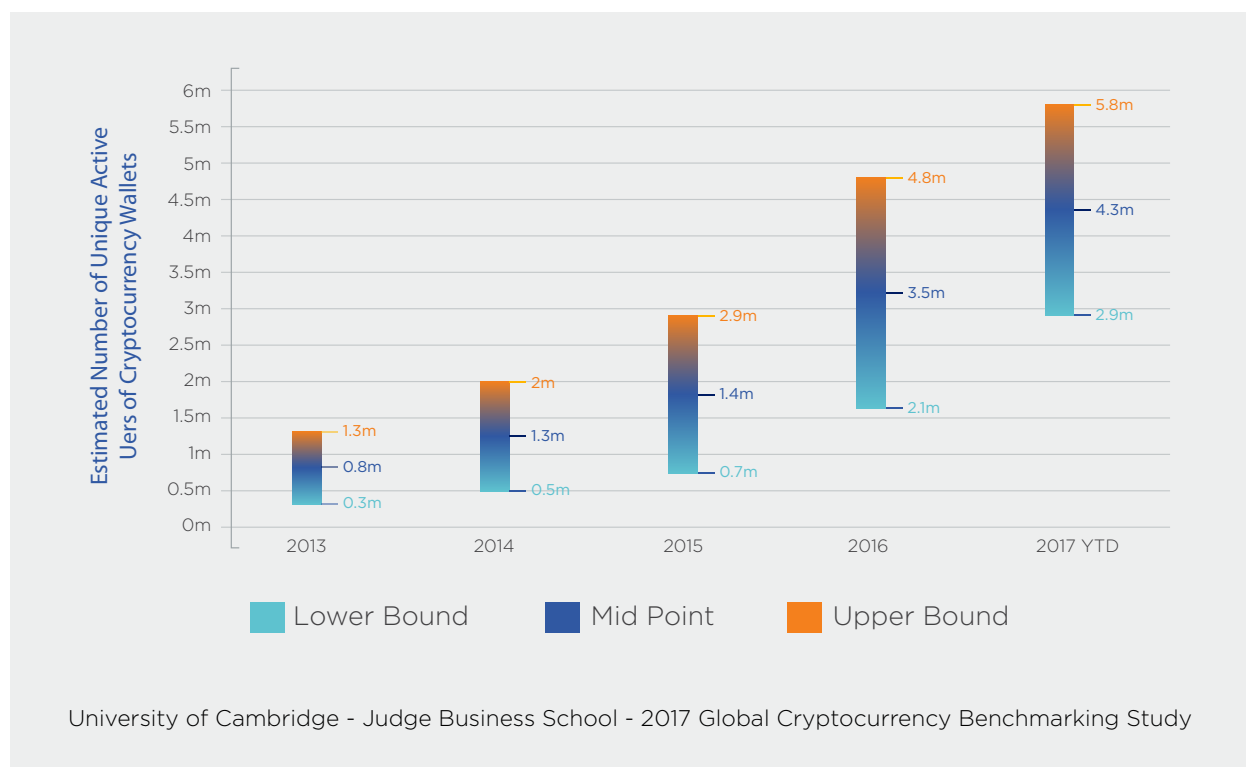
TokenPay will be using the highest ECC encryption available to assure your business that will protect your wallet from hacking.



MERCHANT SERVICES	ACCOUNT SERVICES
Aggressive merchant onboarding and promotion driven by a special zero-fee offer on transaction processing designed to drive increased TPAY denominated payment activity in e-commerce stores.	Zero-fee bank account linked international debit card can be used at all ATMs worldwide with real-time currency exchange capabilities along with the ability to earn cash back rewards in TPAY.

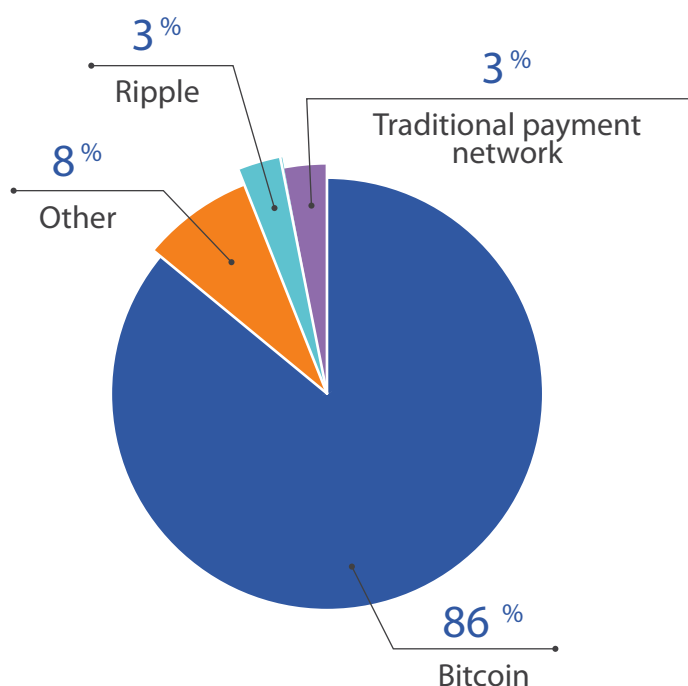
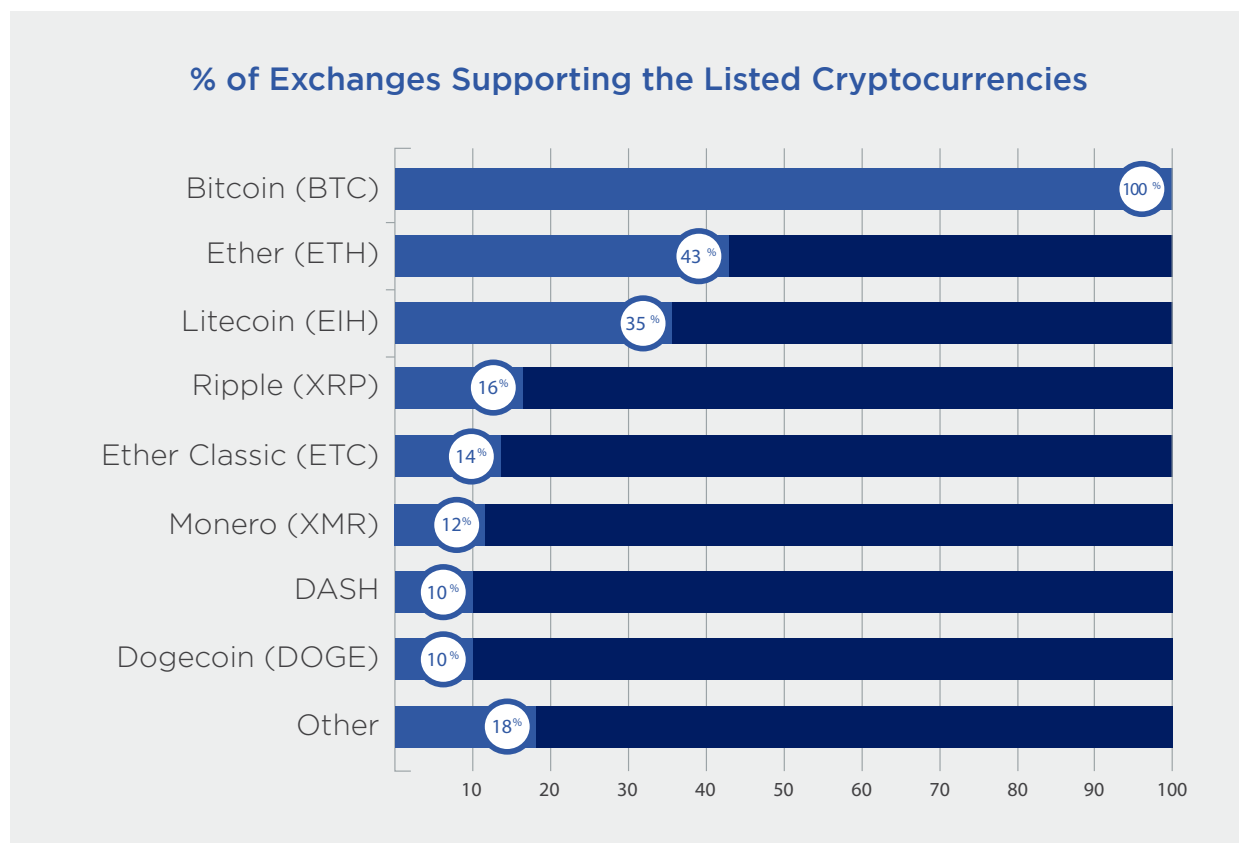
## HIGH DEMAND AND RAPIDLY GROWING MARKET OPPORTUNITY

Consider the core tenants of the TokenPay proposition. That is, there has been a significant growth in the number of unique active users of cryptocurrency wallets. It is estimated that currently there are between 2.9 million and 5.8 million unique users actively using a cryptocurrency wallet. This figure has significantly increased since 2013. However, the Cambridge University study quotes that the estimation of the total number of active wallets does not include users whose exchange accounts serve as their de facto wallet to store cryptocurrency, nor users from payment service providers or other platforms that enable the storage of cryptocurrency. In other words, the total number of active cryptocurrency users is likely considerably higher than the estimate of unique active wallet users.



## Bitcoin Substantially Dominates the Cryptocurrency Market

TPAY is entirely based on the omnipresent Bitcoin. In a large, global survey by the University of Cambridge, all 51 exchanges surveyed listed Bitcoin. The second most popular, Ether, is far behind being listed on only 43% of all exchanges. As well, Bitcoin is the most widely used payment rail for cross-border transactions.

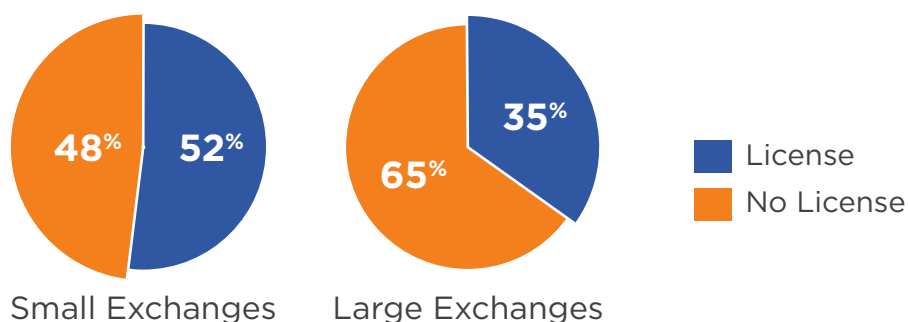


University of Cambridge - Judge Business School - 2017 Global Cryptocurrency Benchmarking Study



## Licensed and Regulated Wallet and Exchange

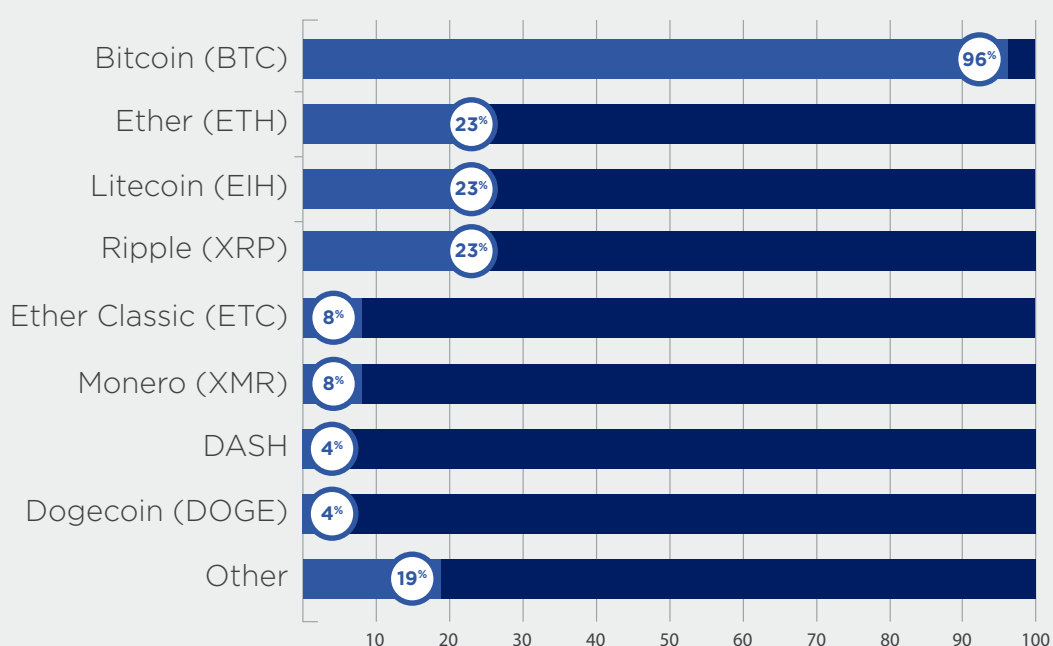
TokenPay intends to offer private exchange services under the custody of a regulated and licensed bank. Each cryptocurrency has a reference implementation that includes basic wallet functionality (e.g., Bitcoin Core for Bitcoin, Mist browser for Ethereum). However, a multitude of wallet providers have emerged in recent years to facilitate the storage of cryptocurrencies and make wallets easier to use. Market data show that most wallets in small exchanges are licensed. However, most of the wallets on large exchanges are not licensed.



University of Cambridge - Judge Business School - 2017 Global Cryptocurrency Benchmarking Study

Bitcoin is the most supported crypto currency in wallets, followed by Litecoin, Ether and Dogecoin. Wallets continue to support more and more different crypto currencies: 31% of wallets that currently only support storing a single cryptocurrency indicate that the current roadmap includes offering support for more cryptocurrencies. 78% of multi-currency wallets plan to also add more cryptocurrencies to current offerings.

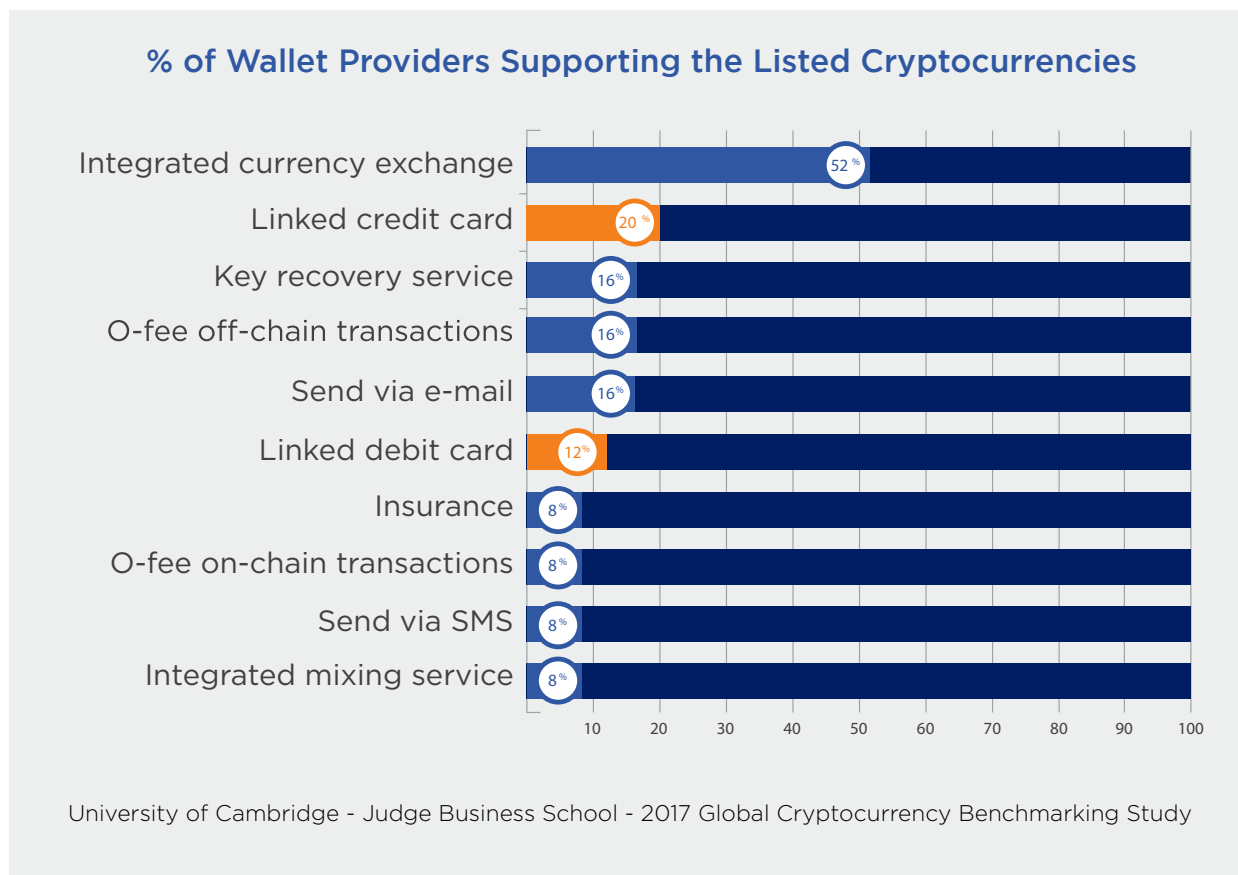
### % of Wallet Sample Supporting the Listed Cryptocurrencies



University of Cambridge - Judge Business School - 2017 Global Cryptocurrency Benchmarking Study

## Fully Linked International BlueDiamond Debit Card

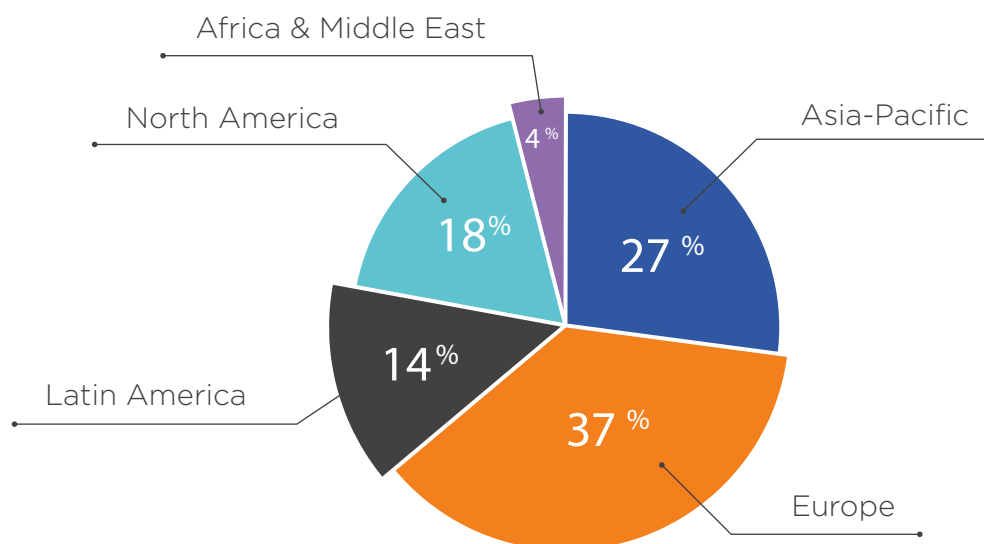
TokenPay will offer a debit card linked to the wallet. This is feature found only in one out of five wallets. Furthermore, TokenPay will have a bank backed infrastructure for the issuance, management and custody of the debit cards.



## TokenPay is Asia-Pacific (APAC) Focused

The APAC region is embracing cryptocurrencies at a rapid pace. Exchanges domiciled in this part of the world account for 27% of the market. This is second only to European domicile exchanges. The number of APAC based exchanges exceeds the North American count by a wide margin.

### Cryptocurrency Exchange Locations



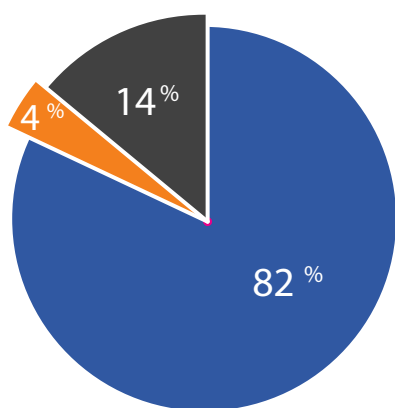
University of Cambridge - Judge Business School - 2017 Global Cryptocurrency Benchmarking Study

## Market Data Supports Strong APAC Cryptocurrency Trends

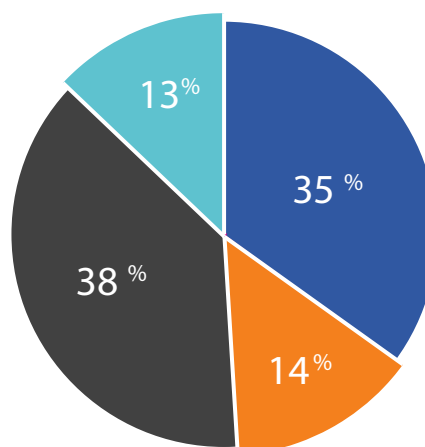
Market data also provides reliable insight into the strength of the APAC region as the logical choice for the first crypto-friendly bank. If users are segmented by type of payment activities, the data indicates that money transfer services are most popular in the APAC region. As well, B2B payment platforms are mostly used by customers based in APAC and Latin America. Findings also suggest that companies engaged in cryptocurrency focused activities maintain a more international customer base. For example, the majority of general purpose cryptocurrency platform activity is concentrated in APAC. That consists of 37% of all user activity. Money transfer services are predominantly APAC based, accounting for 82% of all user activity. TokenPay is currently engaged with a bank in Vanuatu. This privacy driven country is in the center of APAC geographic region.



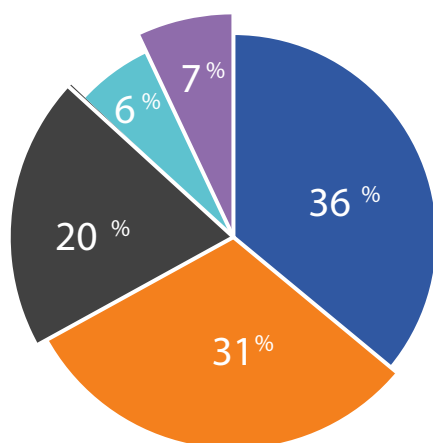
## Asia-Pacific Market Share in Financial Service Industry



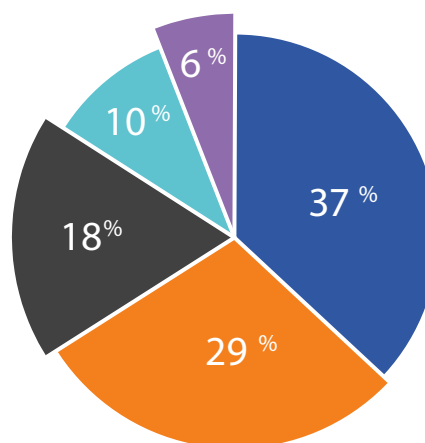
Money transfer services



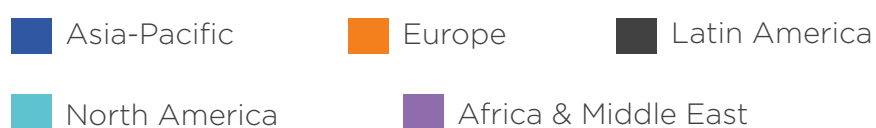
B2B payments



Merchant services



General-purpose  
cryptocurrency platform



University of Cambridge - Judge Business School - 2017 Global Cryptocurrency Benchmarking Study



# TOKENPAY PROJECT ROADMAP

## 2015 Q4

- eFin.com Beta version of platform launched Fall 2015

## 2016 Q4

- Owing to overwhelming user demand for blockchain assets, founders shifted focus to cryptocurrency technology
- Established corporate headquarters in the privacy-focused jurisdiction of the British Virgin Island

## 2017 Q2

- Launched Multi-Signature Transaction Engine
- Released Linux, Windows, macOS and Paper Wallets

## 2017 Q4

- Release Whitepaper of TokenPay Token Sale

## 2018 Q2

- TokenPay website launched for commercial use.
- Complete acquisition or partnership of Bank.
- P2P multi-screen payment platform.
- Global merchant services application available.

## 2019

- TokenPay Bank to expand to new regions within APAC

## 2016 Q2

- Partnership with USTOCKTRADE and London Stock Exchange's Tony Weersinghe
- Feature presentation at MIT Fintech Conference

## 2017 Q1

- Onboard world-class dev team to build a more secure and untraceable version of Bitcoin
- Proprietary Tor network coin technology integration
- Created Stealth Address and Encrypted Messaging system

## 2017 Q3

- Agreed to acquire an established bank
- Added Ring Signature feature to TPAY blockchain
- Zero-Knowledge Proof advanced automation added

## 2018 Q1

- Completion of Token sale
- TPAY utility token integration into platform
- TPAY Apple iOS Mobile Wallet
- Complete due diligence of Bank Integration

## 2018 Q3 OR Q4

- BlueDiamond debit card ships to account holders

TokenPay is launching a TPAY digital token sale to raise funds for the TokenPay project and general corporate purposes. This will allow the team the ability to add more features to the platform. The number of tokens issued per Bitcoin will depend on the Bitcoin raised as per the bonus structure table detailed in this whitepaper. Prospective TPAY buyer can trade any amount of Bitcoin including fractional amounts such as 0.010 Bitcoin. There will be a discount offered to early TPAY buyer that will decay with the number of TPAY claimed during the token sale. There will also be bonuses offered for referring buyers to the TPAY digital token sale. **The are NO REFUNDS once a BTC has been exchanged for TPAY coin.**

**THE  Pay TOKEN SALE IS ON:**

**DECEMBER 7<sup>TH</sup> 2017**



NEW YORK  
10AM



MUNICH  
4PM



LONDON  
3PM



CHINA  
9PM

PERIOD	DATES	BONUS	REFERRAL
1st 7 days	December 7 <sup>th</sup> to 13 <sup>th</sup>	50%	20%
2nd 7 days	December 14 <sup>th</sup> to 20 <sup>th</sup>	40%	15%
3rd 7 days	December 21 <sup>st</sup> to 27 <sup>th</sup>	30%	15%
4th 7 days	December 28 <sup>th</sup> to January 3 <sup>rd</sup>	20%	10%
5th 7 days	January 4 <sup>th</sup> to 10 <sup>th</sup>	10%	10%
6th 7 days	January 11 <sup>th</sup> to 17 <sup>th</sup>	0%	10%

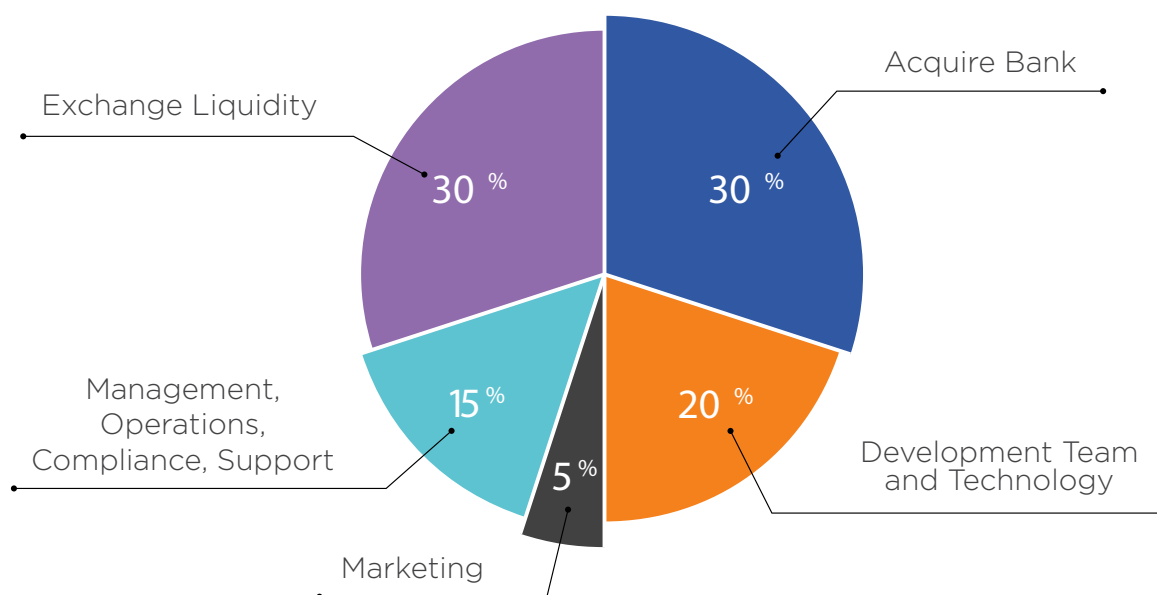
Official Website

[www.tokenpay.com](http://www.tokenpay.com)



## Allocation of Funds

The following graph is an estimate and will change depending on the Tiers achieved in the fundraising of the token sale.



Upon a completed token sale of 5,000 Bitcoin, TokenPay intends to use proceeds in order to implement the following platform features:



### Exchange Liquidity:

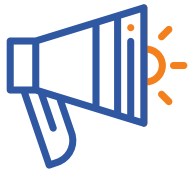
Liquidity is vital to the function of any exchange. In the cryptocurrency world it essentially refers to the degree in which various tokens can be bought and sold while maintaining stable prices. Especially in the case of large orders, low liquidity will result in a highly volatile and undesirable trading experience. Higher liquidity drives less volatility and little price fluctuation in the market. TokenPay intends to create a highly secure and liquid closed-end private exchange for its banking clients. Funds will be safeguarded typical of a licensed and regulated banking environment. At the same time, the current zero-fee P2P wallet based decentralized trading platform will be significantly enhanced.



### Management, Operations, Compliance, Support

Critical to any banking business is experienced management, particularly in the fields of finance and compliance. TokenPay intends to onboard various notable banking professionals to fill roles ranging from general accounting to risk management. Additionally, compliance will be a significant challenge. The major problem plaguing ordinary banks of today is the lack of bank

compliance officers that understand cryptocurrencies. This lack of intuition and understanding is what ultimately drives the banks to be hostile towards new asset classes.



### **Marketing:**

In order to generate bank account signups and the adoption of the technology platform, TokenPay will implement a comprehensive advertising strategy that will be laser focused on targeting international crypto enthusiasts. The objective will be to onboard sufficient enough clients in order to provide reasonable liquidity to the private exchange. The banking operations must reach a critical mass of daily transaction volume in order for the fundamental core exchange to be functional on a multi-currency and low fee basis. TokenPay believes that the cryptocurrency services business has not been substantially penetrated and enormous opportunities exist for a new player to capture market share at a rapid pace.



### **Development Team and Technology:**

Competition for technology development talent is fierce. TokenPay founders have the advantage of a global scale and decades of experience and leadership in sourcing the highest quality programmers, designers and coders. Funds will be utilized in order to immediately put together a top quality team of automation engineers that can build out the desired and planned features for the TokenPay technology platform. Certain tuck-in technology acquisitions will be considered based on a build or buy analysis of the situation at hand.

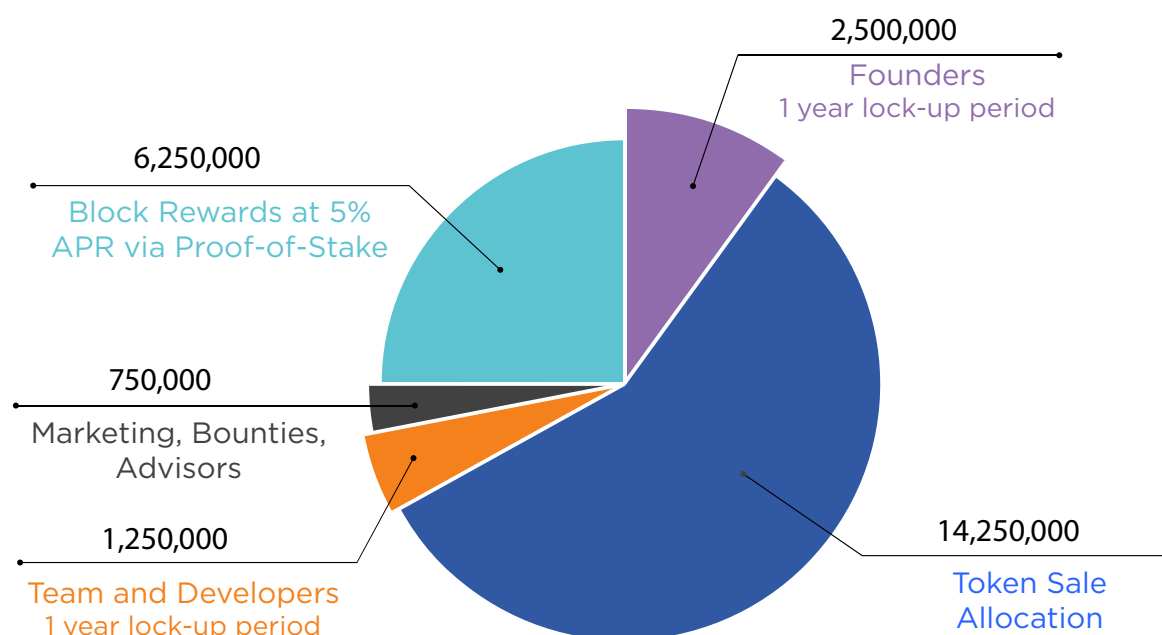


### **Acquire Bank:**

TokenPay plans to form a new bank charter, acquire or partner with a 20 year old private bank located in the privacy focused and crypto friendly region of Vanuatu. Proceeds from the token sale will be used to fund the pending acquisition. Additionally, several banks will be short listed and heavily considered for purchase as well to rapidly roll out the platform across the APAC region. This includes financial institutions in the rapidly growing top tier banking jurisdictions of Hong Kong and Singapore.

## General Token Sale Overview

On December 7th 2017 starting at 10 AM EST, TokenPay will be releasing 14,250,000 TPAY coins to the public. The overall coin distribution is as follows:



## Distribution Details

- A total of 25 million coins have been created for the TPAY coin. No more coins can be created once the 25 million has reached full circulation.
- 57% of all TPAY tokens to be created for purchase by the public in the TPAY initial token sale under the ticker symbol TPAY. All unsold tokens will be kept in a reserve for futures sales.
- 25% of tokens will be offered to the community via Proof-of-Stake.
- 10% will be retained by TPAY's founders and locked up for 1 year, as a gesture of commitment to the purpose and project.
- 5% will be for current and new team members and executives and will be locked up for one year, The remaining.
- 3% of TPAY tokens to be created will be retained for marketing, bounty payments and advertising.

To participate in the TPAY token sale, TokenPay will only accept Bitcoin.



$$1 \text{ BTC} = 3,000 \text{ TPAY}$$

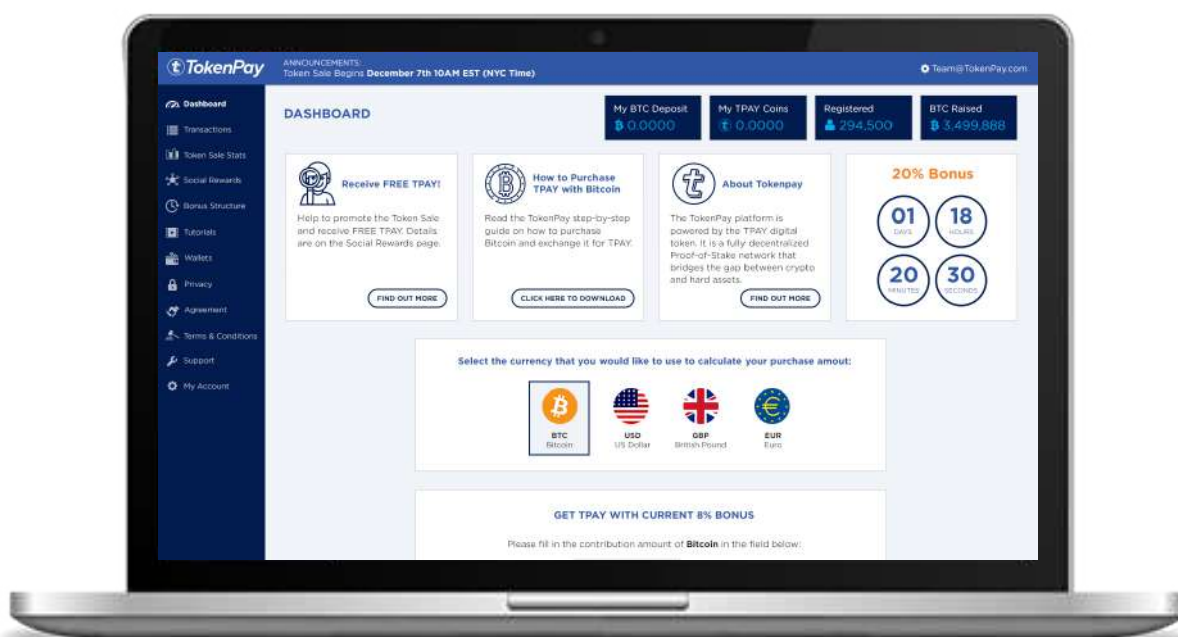
## Early Bird TPAY Purchase Rewards up to 50% Bonus

Token sale purchases receive bonus TPAY coins as noted in the timeline. The earlier the entry, the greater the reward. The bonus is up to 50% of the TPAY purchase value. So, a 2000 TPAY coin buy will receive 3000 TPAY coins in the first 7 days of the official token sale. Total TPAY coin supply is heavily restricted and subject to availability as early purchasers are heavily rewarded.

## Receive up to 20% TPAY Bonus on Unique Referral Link Purchases

There is also a TPAY referral program. Interested parties are able to inform others of the TPAY token sale and distribute a custom referral link. When a signup is made through this dedicated special URL, up to 20% of the total value of the TPAY purchase is sent to the link owner. Purchasers through these referral links are still eligible to receive the corresponding TPAY bonuses.

## Automated Token Sale Dashboard Allows Easy Purchase of TPAY



## TPAY Digital Delivery Within 15 Days of Token Sale Closing

TPAY digital tokens will be transferred 15 to 30 days following the completion of the token sale. Purchases MUST submit their TokenPay wallet address in order to receive their TPAY coins. TPAY purchasers are strongly encouraged to become familiar with the various TokenPay platform wallets. Heavily encrypted and secure desktop, mobile and paper wallets are available for immediate download.

## TOKEN SALE AND THE CORRESPONDING DEVELOPMENT MILESTONES

### TIER 1 \$ 500

Bank integration and development of multi-screen financial platform



Android & IOS



Web



Bank Integration



Currencies and Tokens Support

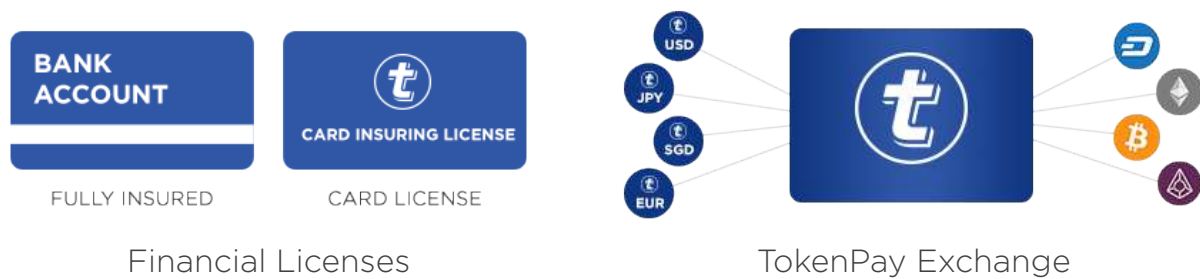
If the TPAY exchange sale reaches a minimum of 1,500 BTC (Bitcoin), TokenPay will be able to offer services on the Android and iOS operating systems as well as an online portal and website. TokenPay will be in the position to fund the acquisition or creation of a licensed banking entity. TokenPay will also begin the process of exploring the development and operation of a multi-card platform.

The following table is a breakdown of the where the allocation of the 1,500 BTC may go.

FUND ALLOCATION	TASKS AND MILESTONES TO REACH
150 BTC	The hiring of additional technical talent to execute the programming, testing and designing the mobile applications for the Android and iOS wallet. Including but not limited to beta tests, quality control, and user feedback.
150 BTC	The hiring of additional technical talent to execute the programming, testing and designing the mobile applications for the website platform Including but not limited to beta tests, quality control, and user feedback.
150 BTC	Hiring non-technical talent to assist in the growth of operations as well as coordinating with external auditors to certify the quality of the TPAY technologies, wallets, web applications, etc. Additionally, work with an accounting firm to provide ongoing monitoring of our financial and accounting standards.
1,050 BTC	Acquire or strategically partner with a bank in a privacy-focused jurisdiction. Additionally, hire an experienced banking team to run the operations and implement growth strategies that are compliant with rules and regulation in local and global markets.

## TIER 2 \$1,500

Fully insured accounts, wallets, exchange and issuance of debit card



When TokenPay reaches 3,500 BTC or when an additional 2,000 BTC can be raised, the company will be able to not only acquire a much larger and established bank in a better jurisdiction but can incorporate additional financial services integrated into our 1st Milestone technologies.

Merchant services will also be an additional service we will provide businesses globally given the completion of Tier 1 and Tier 2 funded.

Acquiring a bigger bank will benefit card holders given the improved control over card fees, limits, royalty fees and reach given the bank may have branches that would make it accessible to more customers.

Additionally, TokenPay will be using the funds to implement a private exchange and will be with enough liquidity to serve a limited amount of customers.

FUND ALLOCATION	TASKS AND MILESTONES TO REACH
250 BTC	Acquire additional Financial licenses to offer other services. Also, hiring of additional technical talent to execute the programming, testing and designing the mobile applications for merchant services. Including but not limited to beta tests, quality control and user feedback.
500 BTC	Hiring of additional technical talent to execute the programming, testing and designing the mobile applications for Token Pay exchange. Including but not limited to beta tests, quality control and user feedback. As well as providing a limited amount of liquidity.
1,250 BTC	The additional funding will allow TokenPay to acquire or strategically partner with a bank in top tier jurisdiction that has enhanced relationships with key international corresponding banks.



### TIER 3 \$2,500

Ultra-high liquidity and low spread private exchange for clients



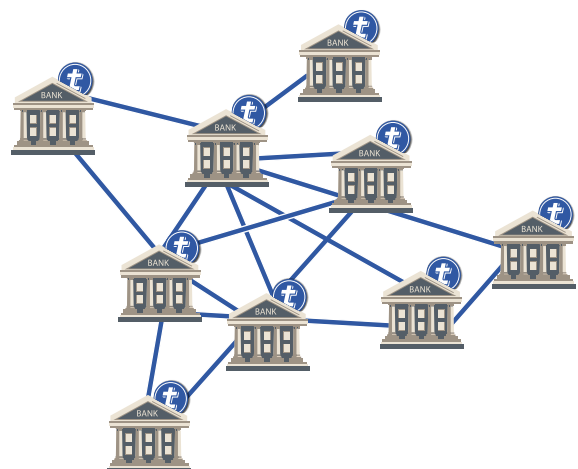
Rapid Fire Multi-Currency Exchange

Following a fully subscribed token sale, the TokenPay platform will be able to provide sufficient liquidity in order to operate a highly efficient and decentralized exchange. The capitalization is ample enough to facilitate thousands of simultaneous transactions between TPAY and the major cryptocurrencies.

Real-time prices, live charts and stereoscopic charting tools will be integrated into the Rapid Fire Multi-Currency Exchange platform. Two-factor authentication will support state-of-the-art security services. Owing to the massive anticipated volume in the exchange, low fees will drive maximum profit for traders.



**CENTRALIZED**



**DECENTRALIZED**

EXCHANGE CONTROLS FUNDS	USER CONTROLS FUNDS
NOT ANONYMOUS	ANONYMOUS
HACKS & SERVER DOWNTIME	NO HACKS & SERVER DOWNTIME

## Pay Token Sale Summary

Ticker Symbol	TPAY
Start	December 7th 2017 10:00 hrs NYC time
End	January 17th 2018, 08:59hrs NYC time
Total amount of coins	25,000,000
% coins to be sold for Network and Bank Charter	57%
% of coins to community via Proof of Stake	25%
% of coins to founders and execs (1-year lockup)	15%
% of coins for Marketing, Bounty, Ads, etc.	3%
Target Amount sold	2,500 BTC
Minimum amount to accept	.01 BTC
Wallet Features	Full Tor network integration Dual-Stealth Address Zero-Knowledge Proof Ring Signatures Secure Communication Interface
Proof of stake awards for first year, thereafter, variable.	5%
Early bird bonus	Variable
Accepted currency for token sale	BTC Only

The tokens will be delivered to the purchase after the purchase. Transferability will start from the first day of trading, which is planned to start from 15 business days to 30 business days from the completion of the token sale.

## Potential Risks to Business Model

As with any business ventures, there are many liabilities that have been identified. A remedial action plan can mitigate the potential consequences:

Liability category	Description / Scenario	Remedial action
Performance	TokenPay is a blockchain project that relies on volume of transactions and utility among consumers and traders to flourish. If growth does not meet expectations, TokenPay may lose customers and this will have a negative effect on the project overall.	Ensure clear and transparent deals are in place with TokenPay merchants and incentivize as many as possible to onboard the platform.
Capital Adequacy	TokenPay is a privacy-focused cryptocurrency platform. In the unlikely event that there is not enough capital to run the business, the project may experience financial difficulty. There are some ways that TokenPay could reach this point: not enough funds raised through the token sale or the popularity of the BlueDiamond debit card reaches such a critical mass that the “cash-back” TPAY rewards cannot be adequately funded.	Ensure a workable, dynamically adjusted, financial model that makes adequate provisions for credits over different scenarios of users and usage patterns of the debit card. Adjust fees and/or credits accordingly to ensure a viable capital adequacy strategy.
Technology	This is the TokenPay core strength, but could also be a liability. Tor network nodes could be hacked and expose our customers IP addresses, hence, compromise our technology promises for confidentiality and privacy.	Ensure that the technology roadmap, vision, and capacity remains ahead of the curve. Engage with the development community and always make sure that TokenPay has the latest patches, and updates. Use of the latest techniques to ensure confidentiality and privacy of customers accounts (nodes) are preserved within the permitted limits of the law.

## TEAM



**Derek Capo**  
CEO

Derek is a former hedge fund analyst who most recently served as VP of International at RoboTerra. He has a finance degree from FIU and has completed advanced Chinese studies.



**Carlos Salazar**  
CTO

Carlos is a cyber security expert with experience managing IT for large international gaming clients. He studied Chemical Engineering at UCR.



**Joseph Pacetti, CPA**  
CFO

Joseph is a compliance expert with significant Mergers and Acquisitions experience. He is a Certified Public Accountant who holds a Masters Degree in Accounting from FIU.



**John Singh, MBA**  
CMO

John has developed marketing campaigns for several global automotive brands with the objective of building social engagement. He has an International MBA from FIU.



**Senen Garcia, JD & MBA**  
**GENERAL COUNSEL**

Senen is a corporate lawyer with 15 years of experience specializing in forensic tax issues. He holds a JD and MBA from St. Thomas University.



**Aaron Tian**  
**APPLICATION DEVELOPER**

Aaron is a fullstack commercial software developer building internal applications for companies like Rakuten, Veeva and App Annie.



**Laurance Gerges**  
**SENIOR UX/UI DESIGNER**

Laurance is a top tier graphic designer and web developer with nearly a decade of experience in UX/UI/front-end development and 3D print design.



**Vlad Turtoi**  
**AUTOMATION DEVELOPER**

Vlad is an end-to-end product developer with full stack engineering capabilities. He specializes in developing complex AI enterprise solutions.



### **Sunerok - Verge Currency (XVG)**

#### **BLOCKCHAIN AUDIT**

Sunerok is the Lead Developer of the Verge Cryptocurrency. It is a secure, anonymous and heavily traded privacy coin that has been widely adopted by crypto enthusiasts.



### **Carlos Arraya**

#### **LEGAL ADVISOR**

Carlos is a compliance specialist experienced in AML, international banking, trusts and global acquisitions. He is a licensed attorney and Bar Association committee Director.



### **Charles Moscoe**

#### **STRATEGY ADVISOR**

Charles is a technology investor with over 20 years of experience in internet commerce. He has funded several fintech startups including investFeed, a popular crypto social network.



### **Elizabeth Vrettos**

#### **AUDIT ADVISOR**

Elizabeth is a manager and expert in Forensics with PricewaterhouseCoopers. She specializes in investigations of bribery, corruption, fraud and due diligence procedures throughout LATAM.





**Subir Lohani**

APAC COMMERCE ADVISOR

Subir is a former Barclays Capital investment banker who focused on the Asian debt market. He is currently the Chief Growth Officer for PayPro Indonesia, a leading e-wallet payments company.

## CONCLUSION

While the use of cryptocurrency is sharply rising there clearly exists a critical problem with mass adoption. It is a victim of its success. While cryptocurrency is essentially designed to be the catalyst for democratizing money, the production, supply, and use of it is highly fragmented. There is no central government or bank control. Therefore, the currency cannot be inflated or deflated. Typical fiat money supply can be largely manipulated without any consultation. There is a seemingly unlimited proliferation of digital coins. As well, relatively lax regulations and the obscure nature of some digital coin issuers is driving extreme pricing unpredictability.

The greed of early-stage investors has also contributed to this volatility. For instance, since the inception of cryptocurrency exchanges coin values have been erratic. These sudden price spikes and drops can cause havoc on regular money services. All of this affects the ability of a coin to be properly utilized for remittance, currency conversion and at ATMs. When a cryptocurrency holder requires fiat to fund meaningful financial activity, they are faced with exorbitant fees. Additionally, a hostile bank client onboarding and compliance process remains challenging. Despite what the promoters say, there is no reliable way to use cryptocurrency. For example, Bitcoin ATMs can charge up to 15% just to convert to fiat currency. This defeats the original purpose of cryptocurrencies, which was to offer a cheaper and more flexible alternative to other payment methods. With no advantage over government-printed money, why would an ordinary person use it?

Reversing the paradigm, banks must operate in a compliant and consumer protective mode that is driven by massive regulatory oversight and fiduciary status. A customer is not able to simply show up with a cryptocurrency wallet and convert the holdings to a widely usable country issued currency. And the idea of conducting a hard asset transaction for instance with cryptocurrency is simply not one that any bank in the world is equipped to process. The problem is that any size transaction with cryptocurrency is immediately flagged as fraudulent. It is nearly impossible to make larger purchases such as a car, house or even school tuition. Issues related to AML, KYC and general regulatory compliance are only a few to consider when accepting and accommodating such a scenario. There is a systemic and reputation risk that must be mitigated. Banks have been known to close the accounts without warning of those transacting in cryptocurrencies.

It seems like every time a new token or coin is being issued into the market there is this flawed assumption that full convertibility and liquidity is guaranteed. This is not only false, but it is completely the opposite of what is the case. Today's crypto system is beginning to replicate the pre-crisis financial system. That is, banks being able to receive any amount of official liquidity at will. As long as the institution had acceptable assets to pledge at the central bank of course. For everything else, such as self-created assets, there was the wholesale funding market. Many of these assets were self-valued at entirely fantastical rates. When the wholesale market froze up, only the central bank had the capacity to support it. But there is no central bank to bail out cryptocurrencies. So, consumerism and utility of cryptocurrencies must

live up to the standards of fiat currency. That is, not on be easy to obtain, but also to be able to create, store, share, use, trade, exchange, transfer and convert seamlessly to fiat. Only then does the cryptocurrency have real-life utility driven by the ability to purchase actual things.

The major question remains. Is there a way around this? Can the cryptocurrency world meet the fiat world? There are Bitcoin debit cards, like Wirex, Xapo, bitwala and more. But this is only half the battle. There still exists critical banking obstacles that prevent the exchange of cryptocurrency to fiat. So, why not reverse the journey, and have the banking world meet the crypto world half way? In a nutshell this is the central premise of TokenPay. The goal is to create the world's first bank that truly understands and embraces cryptocurrency activity. This bank will allow customers the ability to convert cryptocurrencies to fiat to enable the purchase of hard assets. This is a bank that will inevitably cater to the crypto community in a vertically integrated fashion; from consumer accounts to merchant processing. It all starts with a banking relationship. This is why TokenPay's first step is to acquire or strategically partner with a bank.

Customers can store cryptocurrency in insured wallets – as it will be fully backed by a licensed and bonded banking institution. The ability to convert to fiat currency in real-time is conducted on the bank's private closed-end exchange. Current market data indicates that the majority of transactions are national to cryptocurrencies and vice versa. Traditional banking services are on top. These include a debit card that is in fiat currency tied to the bank. All of these are ways to proliferate use and adoption of the banking services. Undoubtedly, debit cards are heavily used in the fiat world. A debit card is tied to a bank account based on fiat currency. The debit cards issued by the cryptocurrency driven bank will be tied to a wallet and a virtual card. The private exchange enables seamless and fluid conversions and transactions. The merchant services appeal is that businesses can accept cryptocurrencies. The objective is the creation of a complete end-to-end solution for decentralized payments and banking.

The TPAY digital token is intended to be fully integrated into to the Tor encrypted banking platform and be used as a secure and unbreakable form of exchange for products and services. Ultimately, the expectation is that TokenPay will become the global platform for simplifying and rapidly executing cryptocurrency to intrinsic value capital transactions.

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