The Only Marketplace for Decentralized Smart Contracts

Own Proprietary Consensus Settlement Algorithm for Real-Time Settlements creating a new wave of Innovation and Financial Smart Contracts.

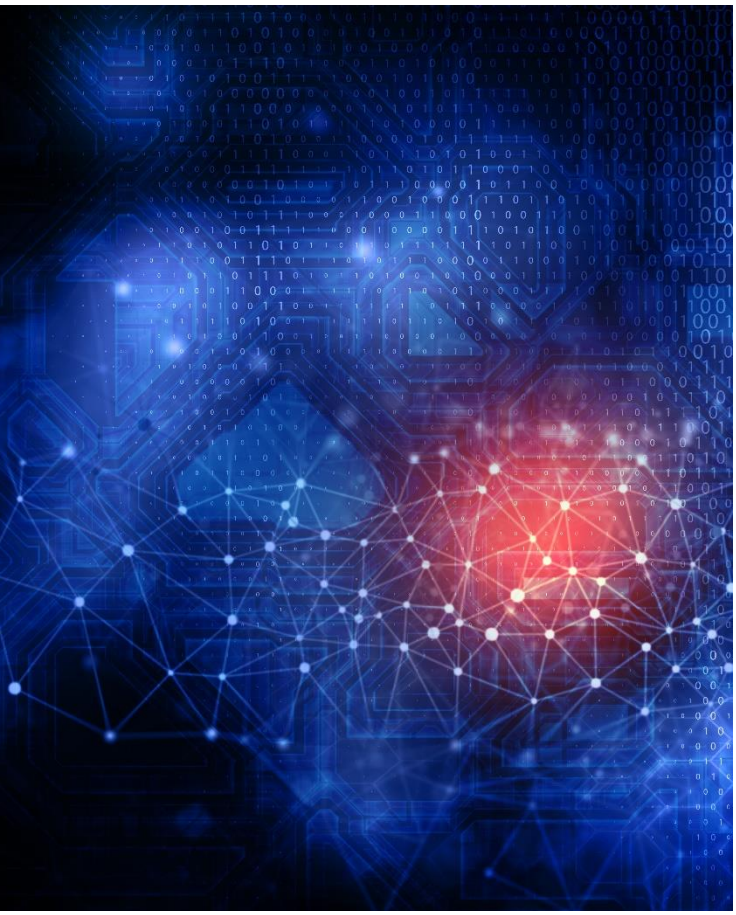
Whitepaper V1.1

February 2018

Smart Contract Solutions within the FinTech Industry

Warehouse Financing / International Trade Finance | Micro-lending
FX OTC Derivatives | Bullion Finance | Structured Products| Prop Tech | E-Sports

Introduction



We are a USA based Global FinTech **NASDAQ:LFIN** listed Company providing Finance and FX Hedging solutions to Importers / Exporters / SME's across the globe powered by Blockchain based Smart Contract Solutions, Artificial Intelligence & Machine Learning.

The company, through its wholly owned subsidiary, Stampede Tradex Pte. Ltd, delivers foreign exchange and finance solutions to importers/exporters and SMEs. Longfin also provides cryptocurrency based financial service for importers/exporters with Ziddu coins from its Blockchain empowered subsidiary Ziddu.com.

We are reimagining the world of Alternative Finance (Shadow Banking), $72 trillion industry powered by Artificial Intelligence, Machine Learning and Blockchain enabled Smart Contracts.

Longfin acquired www.Ziddu.com, Blockchain empowered Marketplace for Decentralized Smart Contracts. Our Ethereum Blockchain Ziddu Warehouse Coin (www.ziddu.com) is a utility token powered by ERC20 Smart Contract.

Abstract

Ziddu:

A Blockchain research company developing decentralized application for Micro lending, Warehouse Finance, Trade Finance, Bullion Trading and Real-time Derivative Settlements.

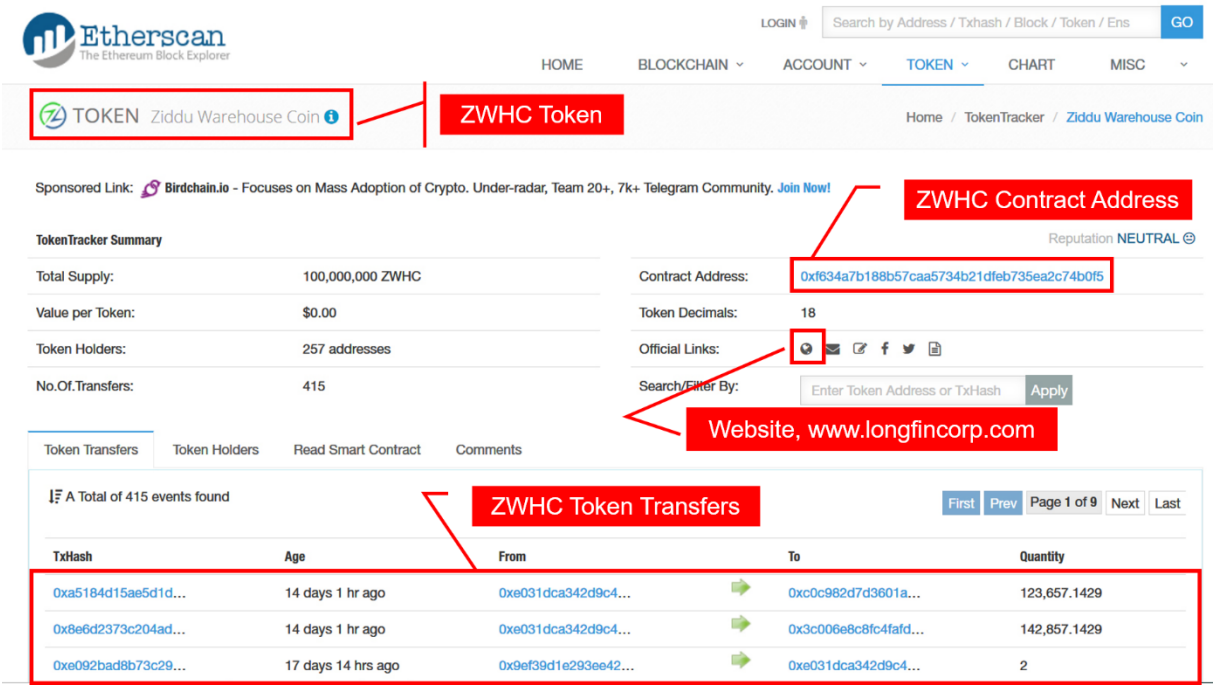
Ziddu.com is an **ERC 20 Ethereum Blockchain** empowered Smart Contract provider, and it is currently the only marketplace for decentralized smart contracts. The Ziddu Ethereum ERC20 Blockchain Token implements a technology stack in which Smart Contracts run in distributed virtual machines, running on a Consensus Settlement Algorithm (CSA). There is public availability for the view of the open ledger, decentralized verification, transparent execution, and the result of contract execution.

Ziddu Warehouse Coin is a smart contract powered by Ethereum ERC20 token standard. Ziddu smart contract is based on the ERC-20 standard token contract with different functions that allows token emission in FinTech domain.

Ziddu Token

Ziddu Token	: 100,000,000 (One Hundred Million)
ZWHC Token type	: ERC20
Purchase methods accepted	: ETH
Project Type	: Token
Settlement Platform	: Ethereum
Category	Blockchain Smart Contracts
Wallet	: Mist Wallet
Website	: www.ziddu.com

"Proof of Verification – Ethereum Block Chain"



What Are Smart Contracts?

Nick Szabo described a smart contract as “a set of promises, specified in digital form, including protocols within which the parties perform on these promises.”

In 1994, Nick Szabo, a legal scholar, and cryptographer, realized that the decentralized ledger could be used for smart contracts are also called self-executing contracts, block chain contracts, or digital contracts. Smart contracts could be converted to computer code, stored and replicated on the system and supervised by the network of computers that run the Blockchain. The outcome of these contracts are considered as ledger feedback such as transferring money and receiving the product or service.

Nick Szabo's definition :

"A set of promises"

- Depending on the business model of smart contract deployed, such promises may be contractual or non-contractual
- They may consist of contractual terms and/or rules-based operations designed to carry out business logic

"Digital form"

- A smart contract operates electronically
- It consists of lines of code as well as the software that prescribes its conditions and outcome of the result.

"Protocols"

- A computer protocol in the form of an algorithm constitutes a set of rules for how each party agrees the contract and should process data in relation to a smart contract
- Technology-enabled, rules-based automated operations enable actions to be performed, such as real time transactions. (i.e the release of payment)

"Smart Contract"

- The idea of automated performance is at the heart of a smart contract, Driven in part by the Blockchain technology that typically hosts a smart contract
- Once Executed, the outcomes for which a smart contract is encoded to perform cannot typically be stopped

Smart Contract Models

What are the different models for smart contracts?

Smart contracts help you exchange assets, money, property, shares, or anything of value in a transparent, conflict-free way while avoiding the services of a middleman or a broker without counter party risk.

Smart Contracts			
Contract entirely in Solidity code	Contract in code with separate natural language	"Split" natural language contract with encoded and performance	Natural language contract with encoded transaction payment mechanism
Encoding Natural Language			**Automation**

The Role of Code:

DEFINING SMART CONTRACTS:

There are many competing conceptions of what a smart contract is. Those from a computer science background often use the term in a quite different way to lawyers. For lawyers, the term 'contract' connotes a very particular legal relationship of obligations, whereas computer scientists tend to think of smart contract more in terms of code.

A smart contract is an automatable and enforceable agreement. Automatable by computer, although some parts may require human input and control. Enforceable either by legal enforcement of rights and obligations or via tamper-proof execution of computer code.

Stark3 presents two distinct schools of smart contracts:

Smart legal contracts: This school resonates most with lawyers. This is where the term smart contract is used to refer to legal contracts, or elements of legal contracts, being represented and executed by software

Smart contract code: The other school relates less to contracts as a lawyer would understand them, and more to a piece of code (known as a software application) that is designed to execute certain tasks if pre-defined conditions are met. Such tasks are often embedded within, and performed on, a public distributed ledger.

Regardless of model the smart contract deployed, they all involve code. Code can contain bugs. Code may not always perform as the parties had intended. Messages transmitted over the internet can be delayed or interrupted, and data can be corrupted in transmission. Private encryption keys can be obtained by hacking. The liability implications of these kinds of events need to be carefully considered.

The smart contract is executed by Ethereum virtual machine (EVM), so we always need a node or a piece of the Ethereum network to execute the contract. Given that smart contracts run in the EVM, An Ethereum transaction contract code can trigger data reads and writes, do expensive computations like using cryptographic primitives, send messages to other contracts, etc. Smart contracts deploys in Ethereum is Solidity, which helps with smart contract creation, compiling, deployment and testing.

Here is the code for a basic smart contract that was written on the Ethereum Blockchain. Contracts can be encoded on any Blockchain, but Ethereum is mostly used since it gives unlimited processing capability.

SNIPPET CODE:

pragma solidity ^0.4.18; contract SimpleStore { function set(uint _value) public { value = _value; } function get() public constant returns (uint) { return value; } uint value; }

What makes up a smart contract?

Welcome To the Age of Smart Contracts –

"If it is not in Blockchain, then it is not a Smart Contract"

Smart contracts are typically deployed on a Blockchain. Within a Blockchain view of this, smart contract program logic sits within a "block." A block is a software-generated container that bundles together the messages relating to a particular smart contract. Those messages may act as inputs or outputs of the smart contract programing logic and may themselves point to other computer code.

Blockchain-based smart contracts—self-executing code on a Blockchain that automatically implements the terms of an agreement between parties

Smart contracts are executed by a computer network that uses consensus protocols to agree upon the sequence of actions resulting from the contract's code. The result is a method by which parties can agree upon terms and trust that they will be executed automatically, with reduced risk of error or manipulation without counter party risk.

How Do Smart Contracts Work?

Block chain's Where You Can Process Smart Contracts

Bitcoin: Bitcoin is great for processing Bitcoin transactions, but has limited ability for processing documents.

Side Chains: This is another name for Blockchain that run adjacent to Bitcoin and offer more scope for processing contracts.

NXT: NXT is a public Blockchain platform that contains a limited selection of templates for smart contracts. You have to use what is given; you're unable to code your own.

Ethereum: Ethereum is a public Blockchain platform and the most advanced for coding and processing smart contracts. You can code whatever you wish but would have to pay for computing power with "ETH" tokens.

Our Technology:

Ziddu Ethereum ERC20 Blockchain Token uses a technology stack in which Smart Contracts run in distributed virtual machines, which in turn run on a Consensus Settlement Algorithm (CSA).

It acts in two ways:

1) Everyone can see the copy of open ledger, decentralized verification and transparent execution
2) Everyone can see the result of contract execution

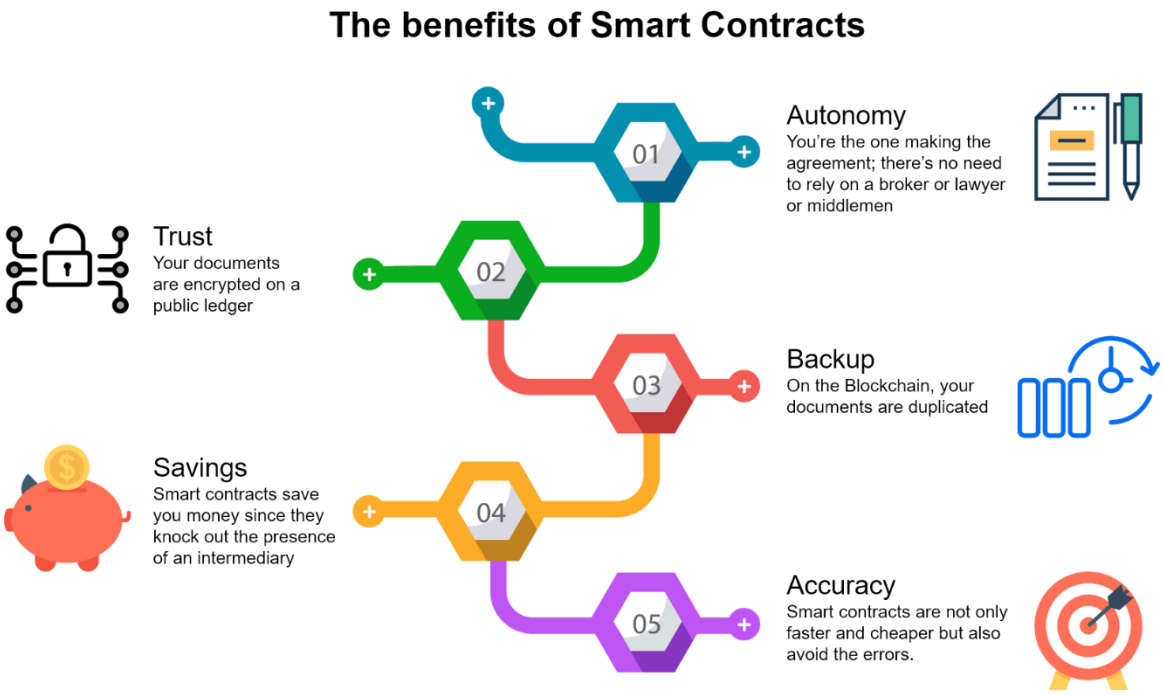
Ziddu Smart Contract

Ziddu follows the core principles of Smart Contracts while also using its own algorithms

- Consensus of Parties
- Ease of Arbitration
- Real-time Execution

Consensus

A consensus protocol is computer protocol in the form of an algorithm constituting a set of rules for how each participant in a Blockchain should process messages and how those participants should accept the processing done by other participants. The purpose of a consensus protocol is to achieve consensus between participants as to what a Blockchain should contain at a given time. Terms used to describe consensus protocols in the context of Blockchain technologies may include “proof of work” or “proof of stake.”



The Anatomy of a Smart Contract

Identify Agreement	• Agreements potentially in scope could include business processes and multiple parties identify a cooperative opportunity and desired outcomes
Set Conditions	• Smart contracts could be initiated by agreement the terms between the parties themselves or by satisfaction of certain conditions like financial market events.
Code the Business Logic	• A software program is written in a way that the arrangement will automatically perform when the conditional parameters are met
Encryption & Blockchain Technology	• Encryption provides secure authentication and verification of messaging between the parties relating to the smart contract
Execution & Processing	• In a Blockchain iteration, when consensus is reached on authentication and verification, the smart contract is written to a block • The code is executed, and the outcomes are memorialized for compliance and verified
Live Block Chain Network	• After performance of the smart contract, all computers in the network update their ledgers to reflect the new state • Once the record is verified and posted to the Blockchain, it is append only, it cannot be altered

Initiating a Smart Contract

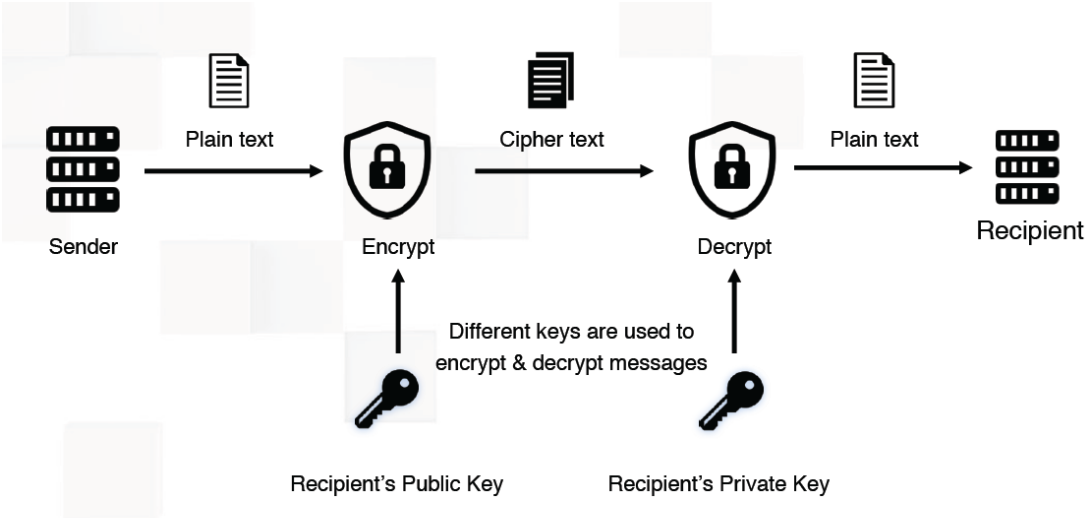
Blockchain technologies use public key encryption infrastructure (PKI).

- Download the software from available sources
- Use an address
- Generate a public key
- Publish the public key

At the same time, the Blockchain will also generate a corresponding private key for the initiator's address. This key is held securely by the software.

If the initiator wishes to trigger a smart contract transaction on the relevant ledger, it uses its address to send an initiating message, encrypted with its private key, to the other participants. The message is picked up by the participants' computers (called "nodes").

How does Blockchain Cryptography Work?



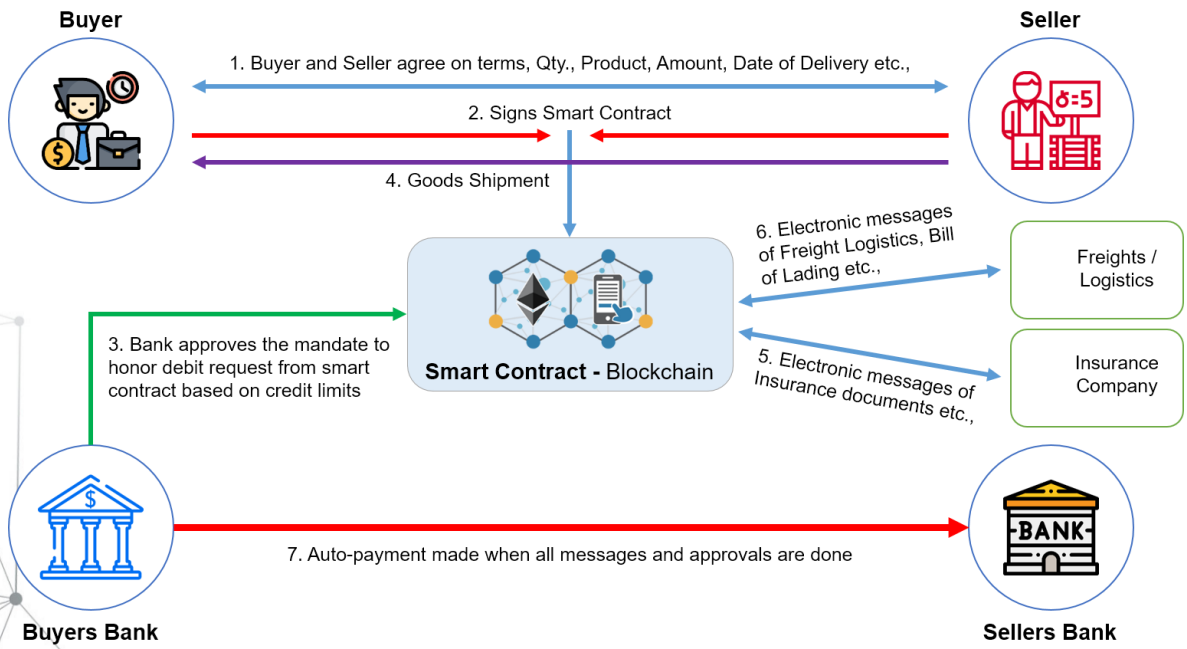
Industry Use Cases: Smart Contracts for Trade Finance

Smart contracts can facilitate streamlined international transfers of goods through faster Letter of Credit and trade payment initiation, while enabling higher liquidity of financial assets.

Payment method and instrument automation enabled by smart contracts provides risk mitigation and improved financing and process efficiencies for buyers, suppliers and financial institutions.

Traditional challenges	Smart Contract Benefits
• Time-consuming and costly Letter of Credit issuance process due to required coordination and paperwork • Physical document management can delay shipment receipt until title document is released • The document fraud/duplicate financing due to de-linked processes	• Faster approval and payment initiation through automated compliance and monitoring of Letter of Credit conditions • Improved efficiency in creating, modifying and validating trade and transport-related contract agreements • Increased liquidity of financial assets due to ease of transfer and fraud reduction

Trade Finance flow using Blockchain



Smart Contracts for Derivatives

Post-trade processes can be streamlined through smart contracts, eliminating the duplicative processes performed by each counterparty for recording and verifying trades, and executing applicable trade level and other lifecycle events.

Enforcing a standard set of rules and conditions to a transaction enabled by smart contracts optimizes post-trade processing of over-the-counter (OTC) derivatives.

Current Challenges	Smart Contract Benefits
• Redundant and time-consuming processes due to asset servicing being managed independently by each counterparty for most OTC derivatives • The Paper-based transaction agreements that contain terms, trade agreements and post trade confirmations	• Automated settlement of obligations while executing triggered processing of trade events • Automated external event processing and succession events • Enabled real-time valuation of positions for real-time exposure monitoring, while reducing errors and disputes

Smart Contracts for Securities

The Simplification of capitalization table management for private companies can be enabled by smart contracts, while also reuniting record ownership with beneficial ownership of publicly traded securities, reducing cost, and counterparty risk.

Current Challenges	Smart Contract Benefits
• Paper-based, manual corporate registration processes • Companies that fail to keep their corporate registrations up-to-date require clean-up and certificate of good standing before issuing securities • Intermediaries increase cost, counterparty risk and latency	• Digitized end-to-end workflows due to securities existing on a distributed ledger • Trade date plus zero days (T+0) securities settlement cycles • It Facilitates automatic payment of dividends and stock splits, while enabling more accurate proxy voting • It Removes counterparty and operational risks created by intermediaries

Blockchain Powered
Ziddu Smart Contract Solutions
within the FinTech Industry

1) Warehouse Financing
2) International Trade Finance
3) Micro-lending
4) FX OTC Derivatives
5) Bullion Finance
6) Structured Products

1. Warehouse Financing / International Trade Finance

Industry Size:

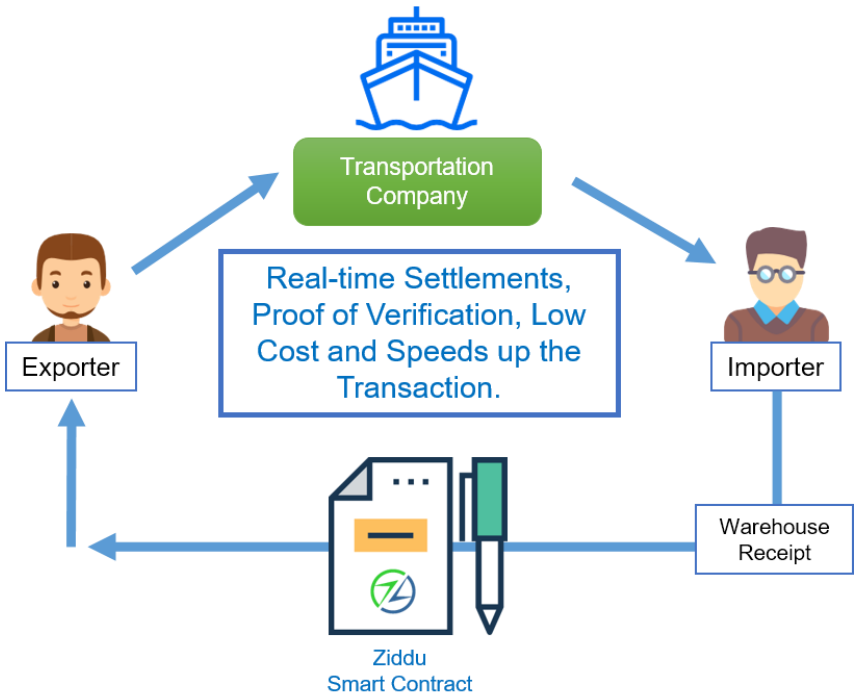
A financial institution engaged in warehouse financing will usually designate a collateral manager who issues a warehouse receipt to the borrower that certifies the quantity and quality of the stored goods or commodities. The industry is worth over $6 Billion.

Source: https://www.slideshare.net/technavio/global-trade-finance-market-2016-to-2020

The $1.6 Trillion Trade Finance Gap persists despite FinTech breakthroughs. According to an Asian Development Bank (ADB) Brief, Asia's share of the trade finance gap was 40% of the global total. In its fifth annual study, 2017 Trade Finance Gaps, Growth, and Jobs Survey, ADB quantifies market gaps for trade finance and explores their impact on growth and jobs through a survey of over 515 banks and 1,336 firms from 103 countries.

Source: https://www.adb.org/news/global-trade-finance-gap-reaches-16-trillion-smes-hardest-hit-adb

Blockchain powered Ziddu Smart Contract



Ziddu Solution:

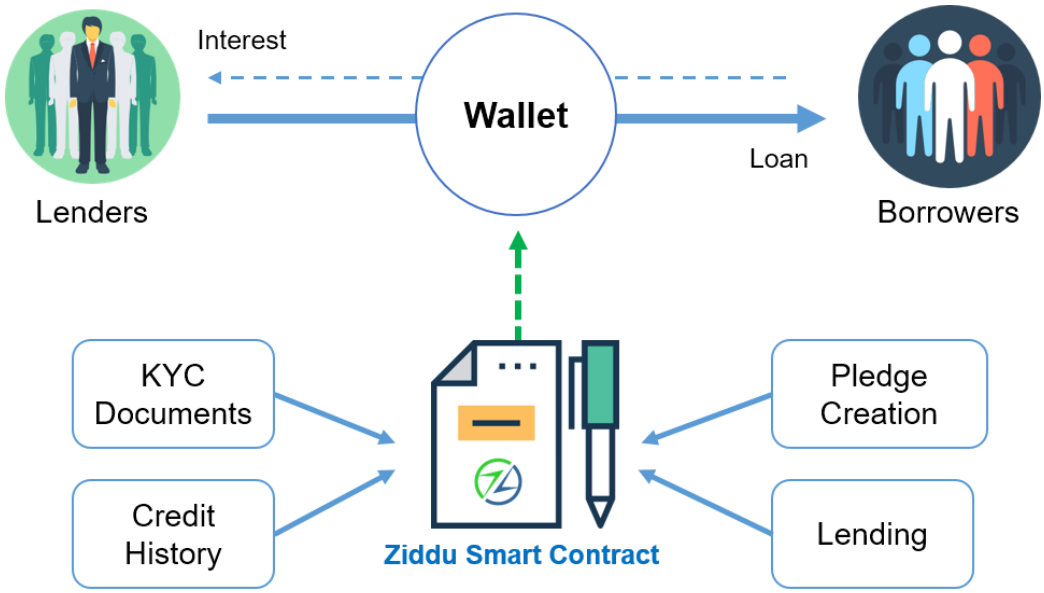
- Local Banks act as escrow agencies in International Trade and Warehouse Financing, but they charge non-trivial fees for this privilege
- Ziddu consensus settlement tokens eliminates the need for Banks. Funds can be released in real-time, subject to Bill of Lading, Origination Certificates, Insurance and Delivery of Logistic Systems

2. Micro-lending

Industry Size:

The peer-to-peer lending market such as Circle Back lending, Lending Club, Peerform, Prosper and Upstart will grow tremendously and will post an impressive of CAGR of more than 53% by 2020. In addition to increasing the growth opportunities of different customers, peer-to-peer or p2p lending also helps companies reduce costs and claims.

Source: https://www.technavio.com/pressrelease/global-p2p-lending-market-grow-cagr-over-53-2020



Ziddu Solution:

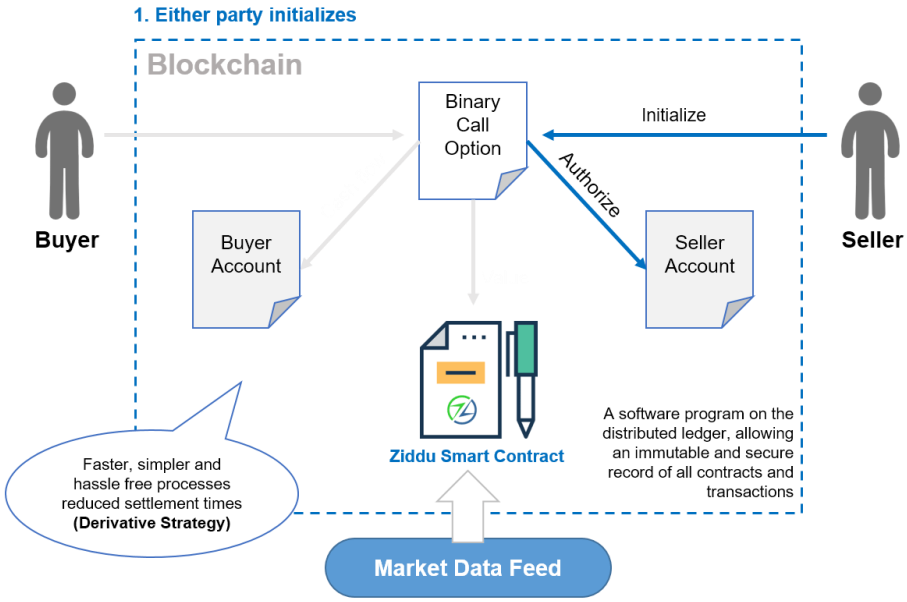
- Ziddu Smart Contract provides disintermediation and potentially balanced reduction of institutional lending
- Ziddu uses Blockchain centric spending like smart mobile wallets do, in a way that is similar to what we see in a Credit/Debit card limits
- The smart contracts will be coded in such a way that allows multiple parties to lend to other parties
- The distributed ledger marketplace offers new distribution channels

3. FX OTC Derivatives

Industry Size:

OTC derivatives are significant in some asset classes: Interest rate, foreign exchange, stocks and commodities. The notional amount of outstanding OTC derivative contracts amounts to over $542 trillion. Foreign Exchange swaps and forwards, which are widely used by corporations to hedge their currency exposure, account for a growing share of the $5 trillion-a-day forex market.

Source: https://www.bis.org/publ/otc_hy1711.htm



Ziddu Solution:

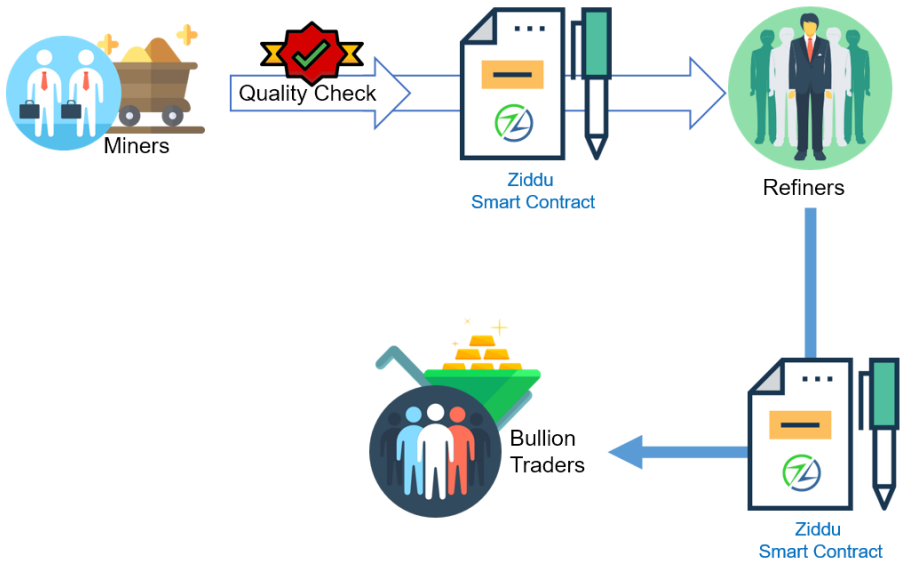
- Ziddu Smart Contracts can settle real-time derivatives between Buyers and Sellers in OTC/FX Options
- The post trading settlement costs are heavy to clearing houses and Swift Networks are serving as intermediaries
- Ziddu smart contracts eliminate the middle man

4. Bullion Finance

Industry Size:

Bullion loans use bullion as collateral or secured precious metals such as Gold, Silver, Platinum and Palladium in the form of bullion bars, rounds and coins, Bullion credit lines are ideal for individual investors and dealers who desire to finance a portion of their bullion purchase. The Bullion finance amounts to over $5.4 trillion a year or $21.6 billion a day.

Source: https://www.revolvy.com/main/index.php?s=London%20bullion%20market



Ziddu Solution:

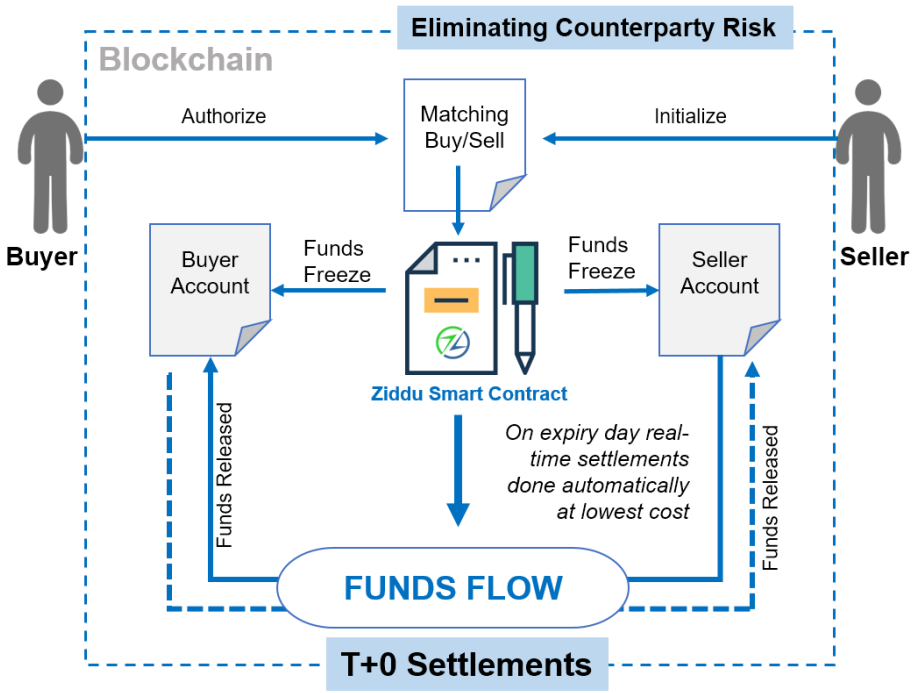
- Once proof of concept is committed as a Smart Contract in Ziddu Ethereum Blockchain, it is very difficult to undo it
- Whole Bullion Smart Contract converts the Trade / Work Flow into Electronic legally binding representation
- As soon as you agree to the legal terms, you can especially represent anything you want

5. Structured Products

Industry Size:

Fixed income securities generate regular income, reduce overall risk and protect against the volatility of a portfolio. The structured products of fixed income smart contacts are about $15 trillion.

Source: http://www.investinganswers.com/financial-dictionary/bonds/barclays-capital-us-aggregate-bond-index-3021



Ziddu Solution:

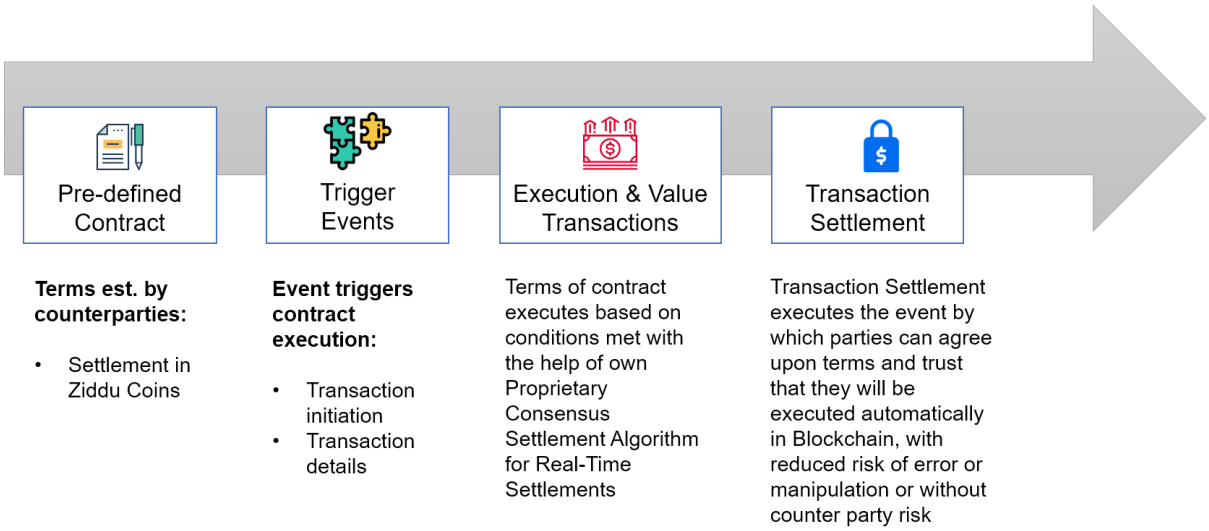
- Post Lehman Crisis, The Counter Party Risk has been the biggest threat to the industry
- Ziddu Smart Contracts can create Structured Notes that don't have access to client funds, but still allow participants to settle the Pay-offs
- Enabling people to create Structured Notes without putting trust on the central party, Ziddu Smart Contract settles the Pay-offs in T+0 by-passing clearing houses / Banks who charge significant amounts

Ziddu Launches Ziddu Smart Contract pilot program on Ethereum Block Chain

Ziddu, a block chain technology focused company which secures the block chain through its financial transaction verification services business, is launching a pilot program to begin securing Ethereum Blockchain and the total notional value of 35 million of smart contracts executed on block chain.

Ethereum is a digital currency and block chain platform focused on smart contract applications. Like bitcoin-based block chain technologies, the decentralized network of Ethereum enables transactions without downtime, censorship, fraud, or third-party interference

Ziddu Smart Contracts – Flow of Execution

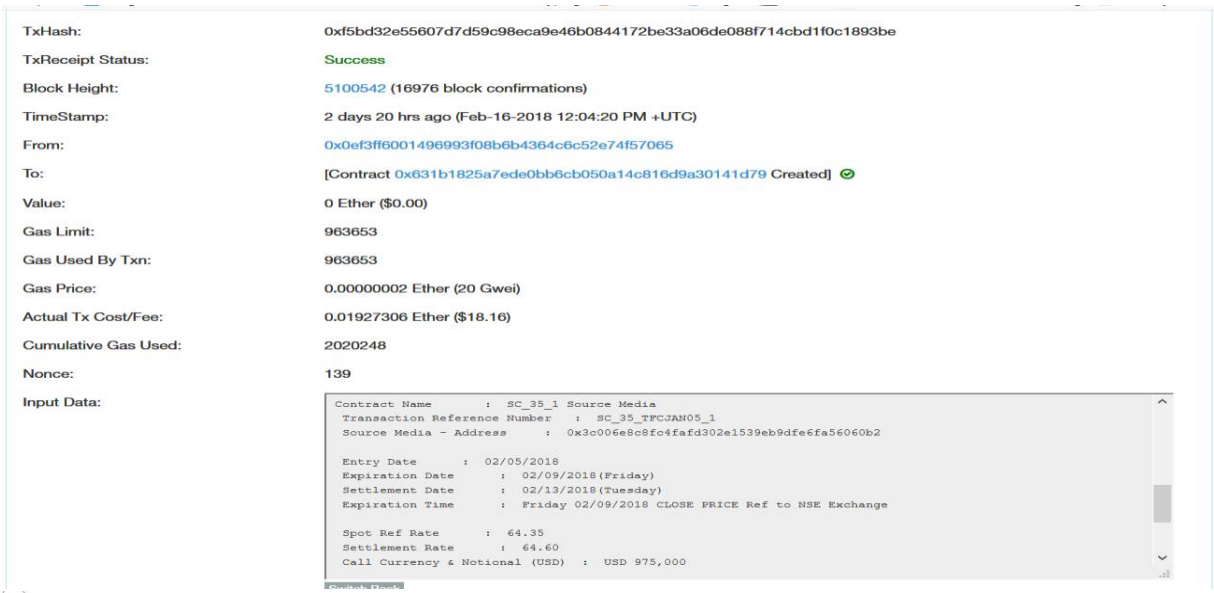


Total **Notional Value** of Smart Contracts Executed on Ethereum Block Chain as on 02-19-2018

Total Notional Value	No. of Contracts
USD 35,100,000	**32**

Contract Creation Process by Seller:

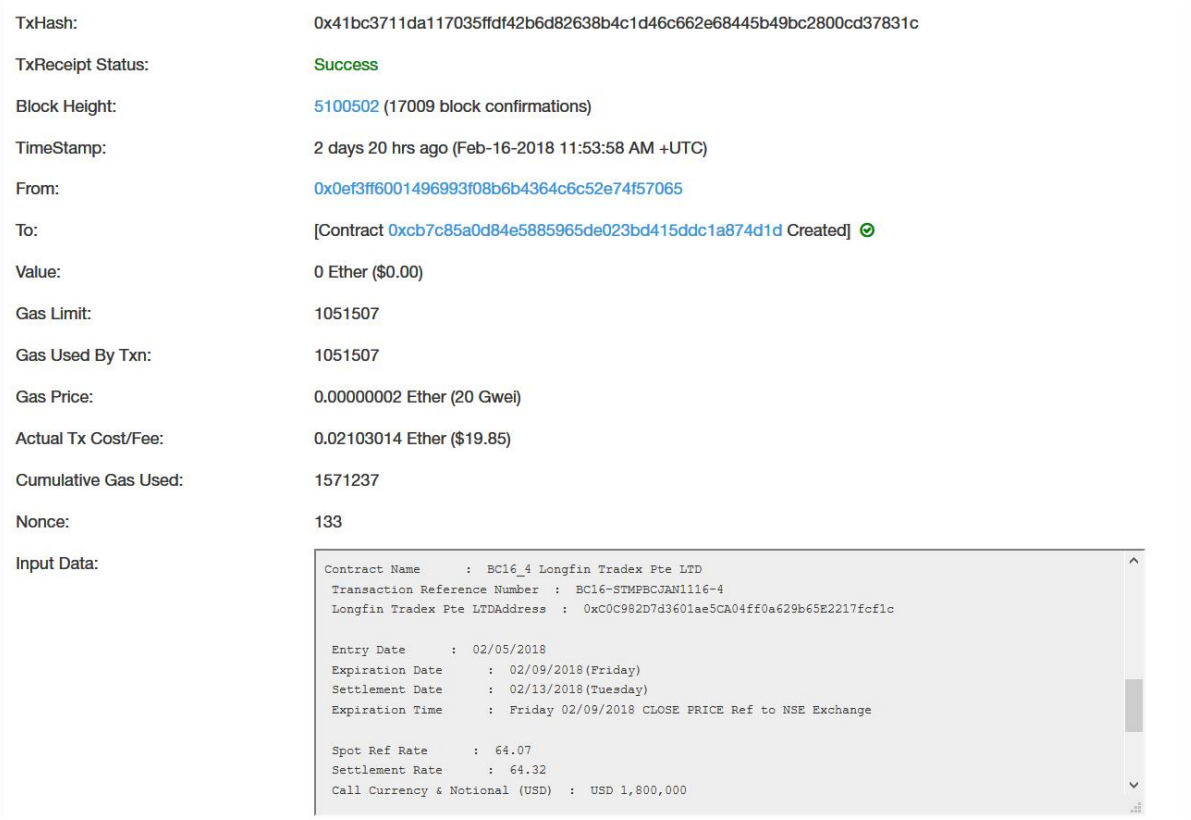
1) Add metadata to any wallet address (e.g invoice): Invoice contracts are created by uploading files (physical invoice file) and then generating hashes which are used as part of the addresses.
2) New anonymous address is generated
3) Metadata can be validated against address:



TxHash:	0xf5bd32e55607d7d59c98eca9e46b0844172be33a06de088f714cbd1f0c1893be
TxReceipt Status:	Success
Block Height:	5100542 (16976 block confirmations)
TimeStamp:	2 days 20 hrs ago (Feb-16-2018 12:04:20 PM +UTC)
From:	0x0ef3ff6001496993f08b6b4364c6c52e74f57065
To:	[Contract 0x631b1825a7ede0bb6cb050a14c816d9a30141d79 Created]
Value:	0 Ether ($0.00)
Gas Limit:	963653
Gas Used By Txn:	963653
Gas Price:	0.00000002 Ether (20 Gwei)
Actual Tx Cost/Fee:	0.01927306 Ether ($18.16)
Cumulative Gas Used:	2020248
Nonce:	139
Input Data:	Contract Name : SC_35_1 Source Media Transaction Reference Number : SC_35_TFCJAN05_1 Source Media - Address : 0x3c006e8c8fc4fafd302e1539eb9dfe6fa56060b2 Entry Date : 02/05/2018 Expiration Date : 02/09/2018(Friday) Settlement Date : 02/13/2018(Tuesday) Expiration Time : Friday 02/09/2018 CLOSE PRICE Ref to NSE Exchange Spot Ref Rate : 64.35 Settlement Rate : 64.60 Call Currency & Notional (USD) : USD 975,000

Contract Creation Process by Buyer:

1) First Metadata (e.g invoice) validated against address: The invoice contract public keys generated in the above process, along with the physical invoice file can be used to validate against the address.
2) Add metadata (e.g signed invoice or receipt):
3) This generates a new address where buyer can make the payment.



TxHash:	0x41bc3711da117035ffdf42b6d82638b4c1d46c662e68445b49bc2800cd37831c
TxReceipt Status:	Success
Block Height:	5100502 (17009 block confirmations)
TimeStamp:	2 days 20 hrs ago (Feb-16-2018 11:53:58 AM +UTC)
From:	0x0ef3ff6001496993f08b6b4364c6c52e74f57065
To:	[Contract 0xcb7c85a0d84e5885965de023bd415ddc1a874d1d Created]
Value:	0 Ether ($0.00)
Gas Limit:	1051507
Gas Used By Txn:	1051507
Gas Price:	0.00000002 Ether (20 Gwei)
Actual Tx Cost/Fee:	0.02103014 Ether ($19.85)
Cumulative Gas Used:	1571237
Nonce:	133
Input Data:	Contract Name : BC16_4 Longfin Tradex Pte LTD Transaction Reference Number : BC16-STMPBCJAN1116-4 Longfin Tradex Pte LTDAddress : 0xC0C982D7d3601ae5CA04ff0a629b65E2217fcf1c Entry Date : 02/05/2018 Expiration Date : 02/09/2018(Friday) Settlement Date : 02/13/2018(Tuesday) Expiration Time : Friday 02/09/2018 CLOSE PRICE Ref to NSE Exchange Spot Ref Rate : 64.07 Settlement Rate : 64.32 Call Currency & Notional (USD) : USD 1,800,000

Note:

- Automated settlement of obligations while executing triggered processing of trade events (e.g. periodic payments)
- Automated external event processing on succession events
- Enabled real-time valuation of positions for real-time exposure monitoring, while reducing errors and/or disputes

Source: *https://www.ziddu.com/smartcontracts.aspx*

Conclusion

We believe that Blockchain and cryptocurrencies are the payment method of the future.

Ziddu Coin act's as a utility coin providing utility services to micro financing, sports and ware house financing. In Essence,Globally it will act as a real utility coin on a public block chain validating the transactions on real time.