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# INNOVATION FOR THE FUTURE

*American Decentralized Real Estates Financing*



*A decentralized marketplace where people in real-world professions will be able to make business deal to anyone.*

# INTRODUCTION

## ZOZO PROJECT



Digital transformation has continued to influence the banking industry in a big way. It is evident from the recent IDC Financial Insights survey that one-third of the IT budget of US banks are dedicated to achieving digital transformation in the next five years. Technology is at the forefront, shaping the industry and enabling it to meet the needs of the clients. The mortgage industry is witnessing a significant transformation with the increase in the number of nontraditional lenders who account for 37 percent of mortgage originations in the US. Such nontraditional lenders are not bound by geographical restrictions or a brick-and-mortar network. Reports from Fannie Mae indicate that only five of the top 20 mortgage originators in 2006 are still active in today's mortgage market. In order to stay relevant to clients and survive in the market, mortgage lenders need to reorient themselves and look at ways and means to accelerate mortgage processes, thereby reducing the mortgage turnaround time. Currently, it typically takes 50-53 days to close a mortgage loan with timelines being primarily driven by countless processes and numerous players that a typical mortgage application passes through.

Automation is already a known facet of the banking industry, but it is limited more towards automating some of the routine tasks within the same system. To take things further, mortgage lenders can look at robotic process automation (RPA) to assist them in their journey towards achieving excellence. By adopting RPA, lenders could replicate what a human being does as part of any routine process, guided by a set of rules without any limitation on the type or nature of the associated system. Such software robots could access the loan origination system, open a word document / spreadsheet, and send emails with Outlook to perform a process, as long as it is well-defined VIA SMART CONTRACTS.



## What is RPA on BLOCKCHAIN of ZoZo Flat form?

According to the Institute of Robotic Process Automation & Artificial Intelligence, robotic process automation (RPA) is the BLOCKCHAIN technology using SMART CONTRACTS and interpret existing applications for processing a transaction, manipulating data, triggering responses, and communicating with other digital systems.

The RPA is all about assigning a software robot that live in the BLOCKCHAIN to perform any work process that is rule-based, workflow-driven, and repeatable. Most importantly, these software robots that live on the BLOCKCHAIN can interact with different IT systems at the graphical user interface (GUI) level without any need of system integration. The key lies in identifying work processes that are repeatable, definable, and rule-based. Later, a defined business process that can be assigned to a software robot for execution is mapped out.

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# ABSTRACT

*This whitepaper describes a comprehensive platform for remote online real estate transactions using Smart Contracts. ZoZo is a proposed implementation of this platform, which intends to reduce reliance on intermediaries while improving liquidity and security.*

# INTRODUCTION BACKGROUND



Throughout history, real estate has arguably served as the most stable store of value. Together with labor, as Adam Smith noted in *The Wealth of Nations*, land serves as not only a store but a producer of wealth. Real estate's popularity over the years has been derived from the fact that not only is land typically an asset which nearly always appreciates in value, but also is often an income-producing asset, generating further capital wealth for its owners. While beneficial for 16th-century nobles to find a safe place to store value, real estate's illiquidity nowadays presents significant inefficiencies for investors, especially those buying properties abroad. Despite these inefficiencies, the overseas property market is significant and growing. Between 2009 and 2016 the demand for cross-border real estate transactions increased 334% from \$65 billion to \$340 billion. We believe this market should be and can be much, much larger.

## THE PROBLEM

*Today, the global real estate market is worth \$217 trillion and makes up more than half the value of all mainstream assets worldwide. One great differentiator between real estate and other major asset classes is liquidity. Compared to exchange-traded securities such as equities and government bonds, real estate markets are not as organized or efficient as other markets, with incredibly slow transaction times and less efficient price discovery mechanisms. As a result, substantial capital is trapped in less liquid investments, often concentrated in certain geographic areas devoid of domestic investment opportunities. While many investors with excess liquidity would welcome the opportunity to invest in foreign real estate assets, there are currently substantial impediments to such investment activity.*

*China is an excellent example of this problem. Currently, Chinese citizens are among the largest groups of foreign investor in the U.S. real estate market. Chinese investors own over \$28 billion in U.S. residential property. However, the total value of the U.S. residential real estate market is over \$29 trillion. Foreign investment in the U.S. residential sector could be potentially equal to hundreds of billions of dollars if foreign investors were properly educated on how to invest and provided with the facility to, among other things, close real estate transactions online. In the current market, Chinese who intend to invest in foreign real estate mainly rely on family and friends to obtain referrals to local brokers, who in turn work with international brokers in selling a property. This process is time-consuming, involves too many intermediaries, and often, the property the buyers are seeking for is sold to another investor before the process is complete.*

*The core of the problem is the lack of international standards or comprehensively available platforms for the electronic transfer and recording of real estate. Each country (and in some cases, as in the United States, even individual counties) maintains its own registry and establishes national (or local) rules for property deed registration and transfers. Moreover, legacy property rights registry systems were developed to handle local real estate transfers but are ill-equipped to handle international ownership transfers. As a result, there is an inferior experience for people on both sides of the marketplace. Additionally, the informality of procedures prevalent in certain jurisdictions makes them particularly susceptible to fraud or tampering. There is currently no single tool available that allows a property investor to research, pay for, and reliably secure and record ownership of international property online.*





# THE SOLUTION

ZoZo aims to solve the problems facing international real estate transactions by creating a novel unified property store and asset transfer platform for the global real estate industry. Initially the ZoZo Registry will mirror official land registry records in which transfers of real estate are recorded. Ultimately, however, ZoZo's vision is that jurisdictions will adopt the ZoZo Registry as their official ledger of record such that the transfer of a property on the ZoZo Registry constitutes the legal transfer of the property and the legal registration of that transfer. By leveraging ZoZo Registry and ZoZo's smart contracts platform, unnecessary delays and impediments inherent to legacy property rights registrations systems could be eliminated. The ZoZo platform seeks to enhance the security of transactions while reducing inefficiencies through its innovative use of mobile, cloud and blockchain technologies linking buyers, sellers, investors and registries around the world.

## BLOCKCHAIN AS A NEW STANDARD FOR PROPERTY REGISTRIES



Blockchain technology holds great promise for a range of industries and use cases, including real estate. A blockchain is a type of shared database, the contents of which are verified and agreed upon by a network of independent actors. In order for a new piece of data (such as the new owner of a transferred property) to be added to the blockchain, the independent verifiers must come to consensus as to its validity. Because each new set of transactions (a "block") is cryptographically linked to the previous block, it is extraordinarily difficult to change data stored in a blockchain and any such change would be readily detectable. Thus blockchains are widely considered to be immutable and thus can serve as a record of proof of ownership.

When transacting in a blockchain platform, each user makes use of a public address (needed for other actors in the network to send a transaction to that user), and a cryptographically paired "private key." Private keys are used to sign transactions digitally, a form of authentication to ensure that a given user has genuinely generated a transaction.



Blockchain is a relatively new technology. The first implementation of blockchain, Bitcoin, launched in 2009. The Ethereum blockchain was released in 2015. In addition to the distributed ledger capability of the Bitcoin blockchain, the Ethereum blockchain allows so-called "smart contracts," which are programs stored in the Ethereum blockchain that can act autonomously to execute sophisticated transactions. The rise of Ethereum and other smart contract platforms has allowed the creation of decentralized applications, or DApps. A DApp is an application whose entire or partial backend code runs on a decentralized ledger with a user interface to facilitate interaction with the blockchain code. Code written to the blockchain is publically accessible, and since the code is running on multiple computers, there is no central point of failure.

Blockchain is currently considered one of the most secure technologies for digital asset transfer due to its distributed nature and use of sophisticated cryptography. Smart contracts, therefore, offer a potential solution for the management of real estate transactions via the introduction of a universal, distributed ledger that does not require trust in a single third party.



# TECHNOLOGY LIMITATIONS

The main limitations of blockchain technology today are:

Transaction time, which is currently ten minutes on average for **BITCOIN** (blockchain.info) and seventeen seconds on average for **ETHEREUM** (ethstats.net);

The cost for each transaction/smart contract execution; and  
The limited ability of the network to interface with real-world information.

Despite these limitations, ZoZo believes that blockchain technology is well suited as a solution to conduct real estate transactions, because the number of transactions in real estate trading is relatively low due to the nature of the sector and the relatively high value of real estate assets. In addition the current transaction time for recording on blockchain is not a limitation for the ZoZo's solution because otherwise it requires weeks or months to acquire a property and complete a transfer of ownership.





ZoZo's engineering team has designed a real estate transaction tool powered by smart contracts, combining solutions from the legal, blockchain and payments industries. Using blockchain technology, ZoZo has prototyped some of the core technology that will become the ZoZo Registry as a DApp that allows each party to a real estate transaction — including the broker, buyer, seller and title agent/notary—to sign off on a transaction for properties located in California, which is ZoZo's intended first market. The workflow of the processes has been built to meet the market rules within the legacy property rights registry systems currently existing in the state of California. The goal of launching the ZoZo platform only in California at first is to allow the current prototype to be narrowly focused on driving consumer testing, adoption and improvements within a closed test market. Thereupon, ZoZo will seek to implement the ZoZo solution and drive continuous rapid growth throughout key markets around the world.

## SMART CONTRACTS FOR THE EXISTING LEGAL FRAMEWORK

Ultimately, the ZoZo Registry will make it possible for every single step of a real estate transaction, from the buyer's reservation of the property to the signing of the purchase agreements for the delivery of the title deeds, to be recorded on blockchain and executed with smart contracts.

However, due to blockchain's new and innovative nature, ZoZo recognizes the existence of regulatory and infrastructure limitations in the current technology as applicable to real estate transactions and is in the process of building a multi-stage solution to be gradually phased in over time.

The first iteration of the ZoZo DApp (which includes a centralized interface and decentralized smart contracts) intends to streamline existing real estate market processes by, among other things, reducing the need to rely on the multiple intermediaries currently involved in the real estate transactions. While aspects of the process will be partly decentralized, it will primarily make the current real estate transfer process easier to manage and more transparent. As it develops, ZoZo intends to transition towards a pure P2P decentralized system that obviates the need for most of the existing intermediaries involved in real estate transactions today. We note that certain intermediaries performing physical functions such as property inspection will remain

part of the transaction process at least in the immediately foreseeable future. The final stage in that evolution would be the adoption of the ZoZo Registry as the legal ledger of record for real estate title transfers in a given jurisdiction. Based on the founders' many years of cross-border property purchase experience to date, we anticipate that emerging markets, hungry for investments in real estate and less encumbered by entrenched special interests, such as bureaucracy, corruption and too many intermediaries, will see the benefits of a pure P2P transaction model. ZoZo has already begun the process of accelerating this transition across multiple metropolitan markets by talking to governments, local lawyers and local real estate players. The team has developed a network of brokers in the UAE, UK, U.S. and a pipeline of international customers from Asia.

# TOWARDS A DECENTRALIZED P2P SYSTEM

Traditionally, international standards are established via conventions, laws and regulations enacted by governments. As a result of the lack of standards with international scope, the current electronic land title registry solutions function as multiple incompatible sets of siloed data which must be manually parsed and translated to work with external platforms. The ZoZo Registry can solve that problem. In order to do so, and for the ZoZo Registry to ultimately deliver on its full promise, it will need to transition from a ledger that mirrors official land registry ledgers to being the official ledger of record.

For a government to adopt this technology, it would need to recognize the legality of the electronic deeds and the ledger. ZoZo is actively engaging with local and state governments to accelerate the acceptance of the ZoZo Registry as a legally valid ledger of record for real estate transfers. Additionally, ZoZo is working with the governments of several emerging countries where, due to systems' inefficiencies, corruption and the lack of regulatory complexity, a transition to a new system is expected to be more straightforward; the specific countries to be disclosed in due course as partnerships are confirmed.





**1** The first one would be the current context, where governments recognize their legacy databases as the exclusive legal evidence of ownership. In this environment, ZoZo intends to initially conduct business and thus, the current development of ZoZo is geared towards mirroring government records in the blockchain with the goal of providing a platform for foreign real estate investors to conveniently and remotely carry out property transactions. The ZoZo Registry acts as a source of fast delivered evidence of property transfer for brokers and serves as a mirror of the ownership transfers currently taking place at the title registries of the targeted markets (U.S., UK, UAE). Brokers who focus on foreign real estate investments, have expressed the need to have available technology that could allow the online processing of real estate purchases with the additional layers of security that the ZoZo Registry intends to provide.

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The second legislative environment would arise when progressive governments start recognizing the benefits of ownership transfers on blockchain as a more desirable alternative instead of trying to continue to enhance the existing real estate registries. The widespread adoption of a blockchain system to manage real estate titles positions ZoZo to provide a sole, decentralized source of validation for real estate transactions.

**2**

## REGULATION CHANGE

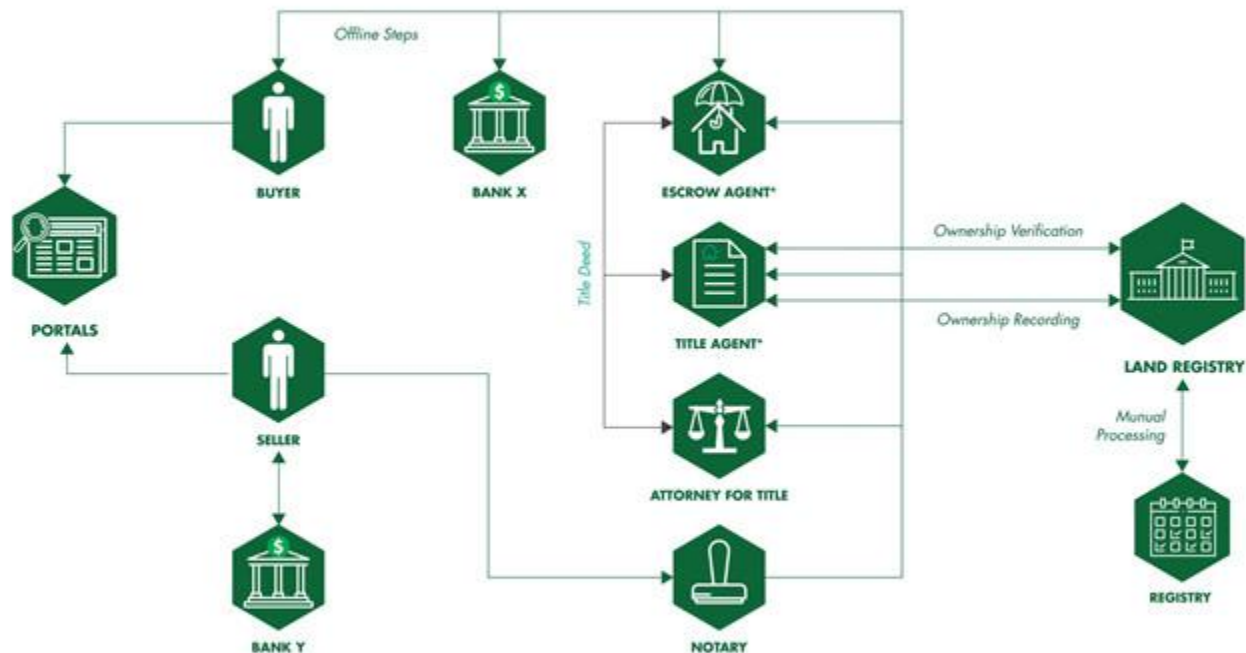
*There are two possible legislative environments we are currently preparing for:*

# BEFORE ZOZO

OFFLINE STEPS



# INTRODUCTION



■ Title insurance and title agent are relevant for the US.

In some countries the role of the title agents is played by others, i.e. notary and lawyers.



# ZoZo PLATFORM V.1

ZoZo consists of multiple software components, as further described below.

## ZoZo - ONLINE ZZCPERTY STORE

ZoZo is an online global real estate store, allowing buyers, sellers, brokers, and escrow/title agents/notaries to come together through the utilization of a suite of smart contracts to facilitate transactions. ZoZo provides a network for these actors to connect with each other and conduct real estate purchases online.

The culmination of the transaction is a digital transfer of ownership on the ZoZo Registry. For more information about these processes and smart contracts, please refer to section 3.

As of the date of this paper, the ZoZo DApp has been developed to allow users to find properties and initiate the purchase process. The current system consists of the following features and primary functions:

Web-based platform ZoZo & iOS App ZoZo

Messenger

Localization in site and application is available in Chinese, Russian, and Arabic

Brokers' activity (check-ins, reviews)

Module for data aggregation and standardization of property listings. Currently works with eight types of data feeds

Off-market subscription providing access to locked property listings

Neighbourhood data: air-pollution, walk score, schools

and Reservation fee payment

### The existing product uses the following technology:

- A** Server: C# with .NET Web API Service, MongoDB Database with two replica sets, OAuth authentication, all services hosted on Microsoft Azure
- B** iOS Application Client: ObjectiveC, supports all phones with minimum version of iOS8- <https://itunes.apple.com/us/app/ZoZo-buy-rent-properties/id1017369540?mt=8>
- C** Website, [www.ZoZo.com](http://www.ZoZo.com): ASP.NET 4, MVC 5, React.js
- D** Website, [www.ZoZo.com](http://www.ZoZo.com): ASP.NET 4, MVC 5, React.js; and D. Web-based Transaction Platform prototype: open Ethereum-based blockchain, Java, web3, truffle

*In the future, ZoZo intends to use a distributed database to store listings as an intermediate step along the way to a decentralized solution. The mobile app and the desktop application would have a digital wallet to store ZoZo Utility Coins (ZZCs) and users would be able to store in those wallets the ZZCs that they collect via the rewards programs that are further described in Section 5 below.*

# ZoZo PLATFORM V.1

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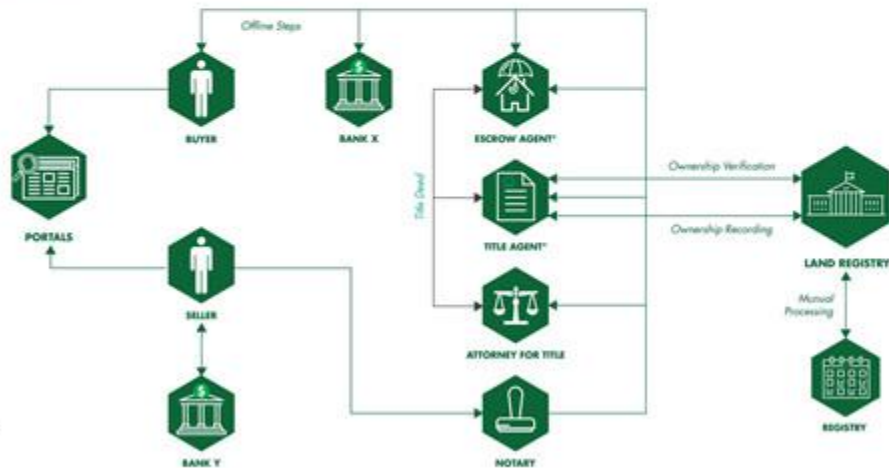
## ZoZo REGISTRY - GLOBAL TITLE REGISTRY

Each property has a unique title that serves as evidence of ownership. The ownership of properties is usually tracked by the recordation of such titles in organized property registries which are managed by regional governmental organizations. As previously discussed, ZoZo aims to develop the ZoZo Registry with the ultimate goal of becoming a global registry for title deed ownership information, which would be made available to worldwide entities, similar to a DNS system for website domains.

### WITH ZoZo AND BLOCKCHAIN

Domain Name Servers (DNS) are the Internet's equivalent of a phone book. They maintain a directory of domain names and translate them to Internet Protocol (IP) addresses.

As the ZoZo Registry evolves into a system that enables buyers to validate real estate transactions legally, ZoZo intends to include a modular system to allow regional governments to provide country-specific rules and regulations related to real estate transactions that would be incorporated into the ZoZo's smart contracts platform. The set of smart contracts developed to date are able to assist executing a real estate purchase within the current market and legal infrastructure in California, i.e. in compliance with rules and policies of escrow and title companies and in compliance with the California laws governing the recording and purchase process rules.



# ZoZo PLATFORM V.1

ZoZo consists of multiple software components, as further described below.

## ZoZo REGISTRY - SMART CONTRACTS ARCHITEC- TURE

ZoZo Registry consists of multiple contracts interacting with each other, and follows a microservices architecture approach. Each contract is responsible for a single type of record in the system. Each contract contains functions that allow the creation and modification of records, contract updates and other administrative functions.

### **The list of contracts that have been developed to date and a brief description of their functions are listed below:**

#### **A Title Contract:**

- a. Responsible for storing and updating property metadata on the blockchain; and
- b. The ZZCs are used to unlock the services within the ZoZo platform that would permit creating and updating property records.

#### **B Deed Contract:**

- a. Manages relevant information for Escrow services;
- b. Tracks and initiates the invitation of participants in the transaction (i.e. title agent); and
- c. Requires ZZCs to create and update deed related records. Microservice architecture is a method of developing software applications as a suite of independently deployable, small, modular services in which each service runs a unique process and communicates through a well-defined, lightweight mechanism to serve a business goal.

*Titles*  
Administrator Pub. key [ZoZo]  
DEED CONTRACT

*Deeds*  
Administrator Pub. key [ZoZo]  
IDENTITY CONTRACT

*Identities*  
Administrator Pub. key [ZoZo]  
2. ZoZo PLATFORM V.1

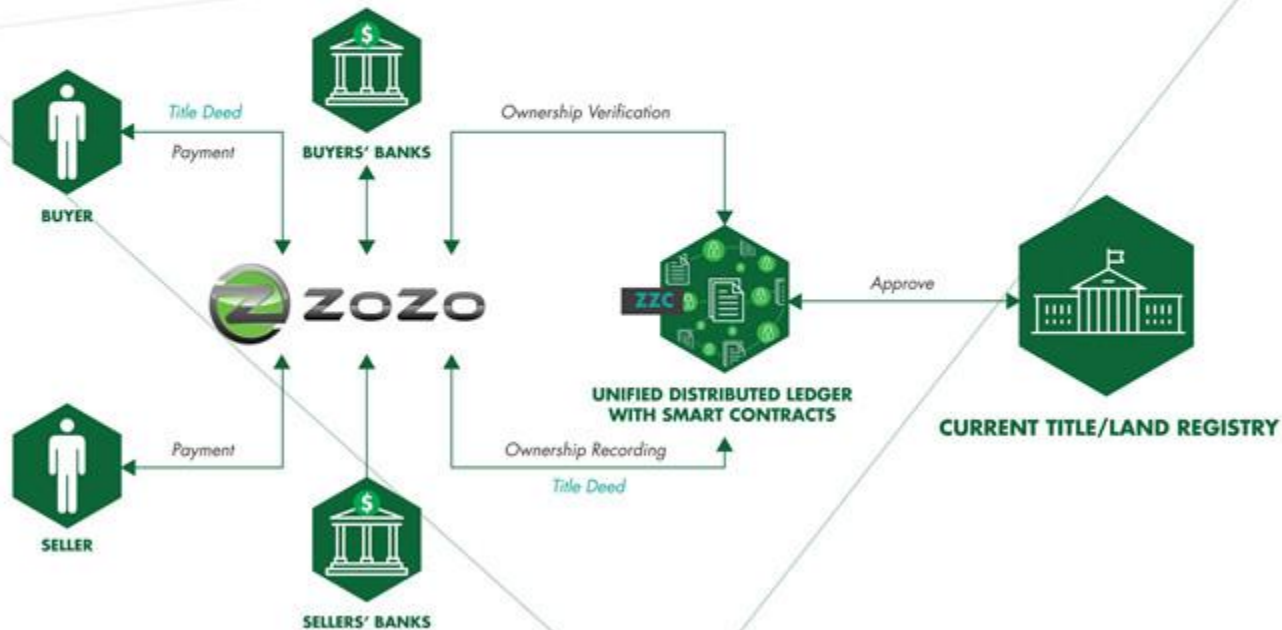
FIGURE 4. Interaction between the ZoZo smart contracts and the real world data.

#### **C Identity Contract:**

- a. Stores multiple records with identity information for all users of the system; and
  - b. Contains KYC features for verifying legal identity.
- Notary Office / Title Company



# WITH ZOZO AND BLOCKCHAIN



**The list of contracts that have been developed to date and a brief description of their functions are listed below:**

**A. Agreements Contract:**

a. Stores instances of various legal agreements (purchase agreements, inspection reports, disclaimers), that need to be digitally signed for Deed transactions.

**B. Electronic Signatures Contract:**

a. Stores digital signatures for all documents, participating in the ZoZo Registry;  
b. Allows to having multiple signatories acting in different capacities in the same document; and

ID ID Name Address Signature Status

Current Owner

DEED

ID Seller\_ID Buyer\_ID Status \* ZoZo\_ID

\* Status:

- waiting for deposit
- security deposit received
- full payment received
- payment released

AGREEMENTS

ID

Doc Type Deed ID

ROLE WHITELIST

Person ID Role

ELECTRONIC SIGNATURE

Agreement ID Role

Signature ID Signature Hash

c. Validates digital signature's format.

IDENTITY

TITLE

FIGURE 5. Smart contracts

architecture.

**C. Payments Contract:**

a. Manages the initiation of payment requests.

b. Tracks status of payment requests.

c. Confirms authenticity of payments using variations of SPV algorithm (Simplified Payment Verification). Specific implementations will vary depending on each payment processor.

**D. Escrow Contracts:**

a. Contains Escrow/Title Agent functionality (adding data about the escrow account number, title transfer signing).

Allows a verified Escrow Agent to lock and release payments.

Individual Parties Contracts: related to a particular real person. Contains KYC features.

The fig. 5 diagram visualizes the information, roles and interaction between each of the smart contracts, described above.

The following participants are involved in different capacities in the smart contracts:

1. Seller
2. Buyer
3. Broker
4. Escrow/Title Agent (or Notary)
5. Recording Office (or Title Registry)
6. Money Transmitter
7. Real Estate Inspector





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*The core of the problem is the lack of international standards or comprehensively available platforms for the electronic transfer and recording of real estate. Each country (and in some cases, as in the United States, even individual counties) maintains its own registry and establishes national (or local) rules for property deed registration and transfers. Moreover, legacy property rights registry systems were developed to handle local real estate transfers but are ill-equipped to handle international ownership transfers. As a result, there is an inferior experience for people on both sides of the marketplace. Additionally, the informality of procedures prevalent in certain jurisdictions makes them particularly susceptible to fraud or tampering. There is currently no single tool available that allows a property investor to research, pay for, and reliably secure and record ownership of international property online.*





# THE SOLUTION

ZoZo aims to solve the problems facing international real estate transactions by creating a novel unified property store and asset transfer platform for the global real estate industry. Initially the ZoZo Registry will mirror official land registry records in which transfers of real estate are recorded. Ultimately, however, ZoZo's vision is that jurisdictions will adopt the ZoZo Registry as their official ledger of record such that the transfer of a property on the ZoZo Registry constitutes the legal transfer of the property and the legal registration of that transfer. By leveraging ZoZo Registry and ZoZo's smart contracts platform, unnecessary delays and impediments inherent to legacy property rights registrations systems could be eliminated. The ZoZo platform seeks to enhance the security of transactions while reducing inefficiencies through its innovative use of mobile, cloud and blockchain technologies linking buyers, sellers, investors and registries around the world.

## BLOCKCHAIN AS A NEW STANDARD FOR PROPERTY REGISTRIES



Blockchain technology holds great promise for a range of industries and use cases, including real estate. A blockchain is a type of shared database, the contents of which are verified and agreed upon by a network of independent actors. In order for a new piece of data (such as the new owner of a transferred property) to be added to the blockchain, the independent verifiers must come to consensus as to its validity. Because each new set of transactions (a "block") is cryptographically linked to the previous block, it is extraordinarily difficult to change data stored in a blockchain and any such change would be readily detectable. Thus blockchains are widely considered to be immutable and thus can serve as a record of proof of ownership.

When transacting in a blockchain platform, each user makes use of a public address (needed for other actors in the network to send a transaction to that user), and a cryptographically paired "private key." Private keys are used to sign transactions digitally, a form of authentication to ensure that a given user has genuinely generated a transaction.



Blockchain is a relatively new technology. The first implementation of blockchain, Bitcoin, launched in 2009. The Ethereum blockchain was released in 2015. In addition to the distributed ledger capability of the Bitcoin blockchain, the Ethereum blockchain allows so-called "smart contracts," which are programs stored in the Ethereum blockchain that can act autonomously to execute sophisticated transactions. The rise of Ethereum and other smart contract platforms has allowed the creation of decentralized applications, or DApps. A DApp is an application whose entire or partial backend code runs on a decentralized ledger with a user interface to facilitate interaction with the blockchain code. Code written to the blockchain is publically accessible, and since the code is running on multiple computers, there is no central point of failure.

Blockchain is currently considered one of the most secure technologies for digital asset transfer due to its distributed nature and use of sophisticated cryptography. Smart contracts, therefore, offer a potential solution for the management of real estate transactions via the introduction of a universal, distributed ledger that does not require trust in a single third party.

# TECHNOLOGY LIMITATIONS

The main limitations of blockchain technology today are:

Transaction time, which is currently ten minutes on average for **BITCOIN** (blockchain.info) and seventeen seconds on average for **ETHEREUM** (ethstats.net);

The cost for each transaction/smart contract execution; and  
The limited ability of the network to interface with real-world information.

Despite these limitations, ZoZo believes that blockchain technology is well suited as a solution to conduct real estate transactions, because the number of transactions in real estate trading is relatively low due to the nature of the sector and the relatively high value of real estate assets. In addition the current transaction time for recording on blockchain is not a limitation for the ZoZo's solution because otherwise it requires weeks or months to acquire a property and complete a transfer of ownership.







ZoZo's engineering team has designed a real estate transaction tool powered by smart contracts, combining solutions from the legal, blockchain and payments industries. Using blockchain technology, ZoZo has prototyped some of the core technology that will become the ZoZo Registry as a DApp that allows each party to a real estate transaction — including the broker, buyer, seller and title agent/notary—to sign off on a transaction for properties located in California, which is ZoZo's intended first market. The workflow of the processes has been built to meet the market rules within the legacy property rights registry systems currently existing in the state of California. The goal of launching the ZoZo platform only in California at first is to allow the current prototype to be narrowly focused on driving consumer testing, adoption and improvements within a closed test market. Thereupon, ZoZo will seek to implement the ZoZo solution and drive continuous rapid growth throughout key markets around the world.

## SMART CONTRACTS FOR THE EXISTING LEGAL FRAMEWORK

Ultimately, the ZoZo Registry will make it possible for every single step of a real estate transaction, from the buyer's reservation of the property to the signing of the purchase agreements for the delivery of the title deeds, to be recorded on blockchain and executed with smart contracts.

However, due to blockchain's new and innovative nature, ZoZo recognizes the existence of regulatory and infrastructure limitations in the current technology as applicable to real estate transactions and is in the process of building a multi-stage solution to be gradually phased in over time.

The first iteration of the ZoZo DApp (which includes a centralized interface and decentralized smart contracts) intends to streamline existing real estate market processes by, among other things, reducing the need to rely on the multiple intermediaries currently involved in the real estate transactions. While aspects of the process will be partly decentralized, it will primarily make the current real estate transfer process easier to manage and more transparent. As it develops, ZoZo intends to transition towards a pure P2P decentralized system that obviates the need for most of the existing intermediaries involved in real estate transactions today. We note that certain intermediaries performing physical functions such as property inspection will remain

part of the transaction process at least in the immediately foreseeable future. The final stage in that evolution would be the adoption of the ZoZo Registry as the legal ledger of record for real estate title transfers in a given jurisdiction. Based on the founders' many years of cross-border property purchase experience to date, we anticipate that emerging markets, hungry for investments in real estate and less encumbered by entrenched special interests, such as bureaucracy, corruption and too many intermediaries, will see the benefits of a pure P2P transaction model. ZoZo has already begun the process of accelerating this transition across multiple metropolitan markets by talking to governments, local lawyers and local real estate players. The team has developed a network of brokers in the UAE, UK, U.S. and a pipeline of international customers from Asia.



# TOWARDS A DECENTRALIZED P2P SYSTEM

Traditionally, international standards are established via conventions, laws and regulations enacted by governments. As a result of the lack of standards with international scope, the current electronic land title registry solutions function as multiple incompatible sets of siloed data which must be manually parsed and translated to work with external platforms. The ZoZo Registry can solve that problem. In order to do so, and for the ZoZo Registry to ultimately deliver on its full promise, it will need to transition from a ledger that mirrors official land registry ledgers to being the official ledger of record.

For a government to adopt this technology, it would need to recognize the legality of the electronic deeds and the ledger. ZoZo is actively engaging with local and state governments to accelerate the acceptance of the ZoZo Registry as a legally valid ledger of record for real estate transfers. Additionally, ZoZo is working with the governments of several emerging countries where, due to systems' inefficiencies, corruption and the lack of regulatory complexity, a transition to a new system is expected to be more straightforward; the specific countries to be disclosed in due course as partnerships are confirmed.



**1** The first one would be the current context, where governments recognize their legacy databases as the exclusive legal evidence of ownership. In this environment, ZoZo intends to initially conduct business and thus, the current development of ZoZo is geared towards mirroring government records in the blockchain with the goal of providing a platform for foreign real estate investors to conveniently and remotely carry out property transactions. The ZoZo Registry acts as a source of fast delivered evidence of property transfer for brokers and serves as a mirror of the ownership transfers currently taking place at the title registries of the targeted markets (U.S., UK, UAE). Brokers who focus on foreign real estate investments, have expressed the need to have available technology that could allow the online processing of real estate purchases with the additional layers of security that the ZoZo Registry intends to provide.

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The second legislative environment would arise when progressive governments start recognizing the benefits of ownership transfers on blockchain as a more desirable alternative instead of trying to continue to enhance the existing real estate registries. The widespread adoption of a blockchain system to manage real estate titles positions ZoZo to provide a sole, decentralized source of validation for real estate transactions.

**2**

## REGULATION CHANGE

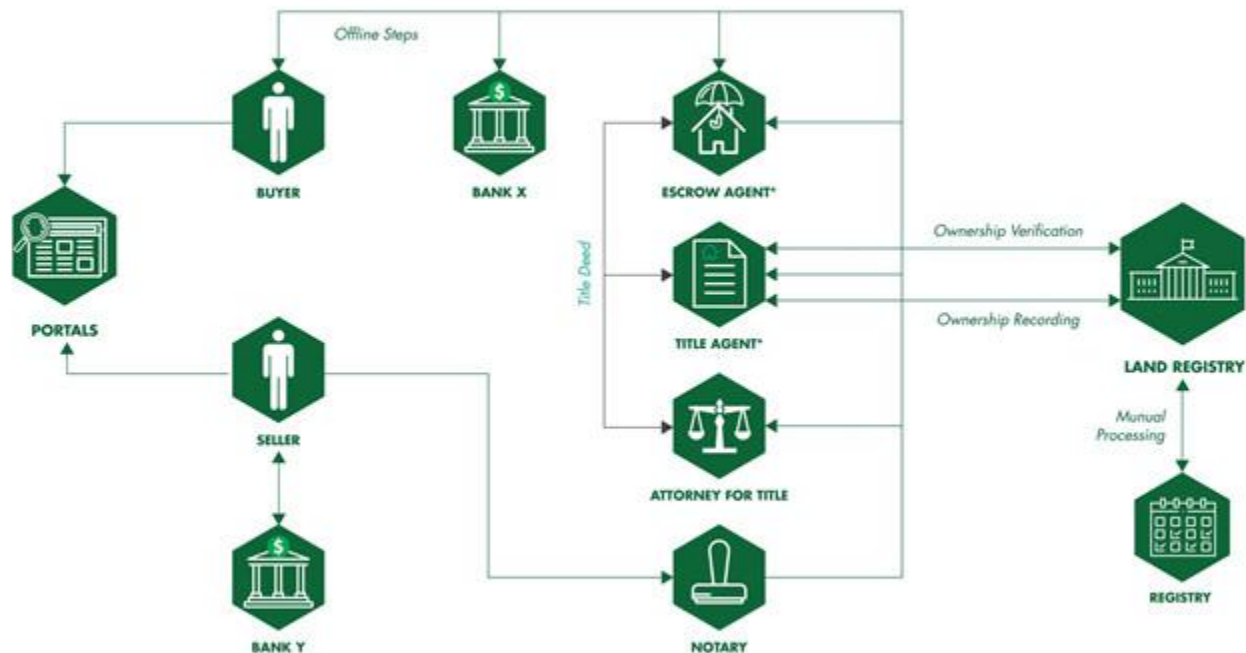
*There are two possible legislative environments we are currently preparing for:*

# BEFORE ZOZO

OFFLINE STEPS



# INTRODUCTION



■ Title insurance and title agent are relevant for the US.

In some countries the role of the title agents is played by others, i.e. notary and lawyers.



# ZoZo PLATFORM V.1

ZoZo consists of multiple software components, as further described below.

## ZoZo - ONLINE ZZCPERTY STORE

ZoZo is an online global real estate store, allowing buyers, sellers, brokers, and escrow/title agents/notaries to come together through the utilization of a suite of smart contracts to facilitate transactions. ZoZo provides a network for these actors to connect with each other and conduct real estate purchases online.

The culmination of the transaction is a digital transfer of ownership on the ZoZo Registry. For more information about these processes and smart contracts, please refer to section 3.

As of the date of this paper, the ZoZo DApp has been developed to allow users to find properties and initiate the purchase process. The current system consists of the following features and primary functions:

Web-based platform ZoZo & iOS App ZoZo

Messenger

Localization in site and application is available in Chinese, Russian, and Arabic

Brokers' activity (check-ins, reviews)

Module for data aggregation and standardization of property listings. Currently works with eight types of data feeds

Off-market subscription providing access to locked property listings

Neighbourhood data: air-pollution, walk score, schools

and Reservation fee payment

### The existing product uses the following technology:

- A** Server: C# with .NET Web API Service, MongoDB Database with two replica sets, OAuth authentication, all services hosted on Microsoft Azure
- B** iOS Application Client: ObjectiveC, supports all phones with minimum version of iOS8- <https://itunes.apple.com/us/app/ZoZo-buy-rent-properties/id1017369540?mt=8>
- C** Website, [www.ZoZo.com](http://www.ZoZo.com): ASP.NET 4, MVC 5, React.js
- D** Website, [www.ZoZo.com](http://www.ZoZo.com): ASP.NET 4, MVC 5, React.js; and D. Web-based Transaction Platform prototype: open Ethereum-based blockchain, Java, web3, truffle

*In the future, ZoZo intends to use a distributed database to store listings as an intermediate step along the way to a decentralized solution. The mobile app and the desktop application would have a digital wallet to store ZoZo Utility Coins (ZZCs) and users would be able to store in those wallets the ZZCs that they collect via the rewards programs that are further described in Section 5 below.*

# ZoZo PLATFORM V.1

ZoZo consists of multiple software components, as further described below.

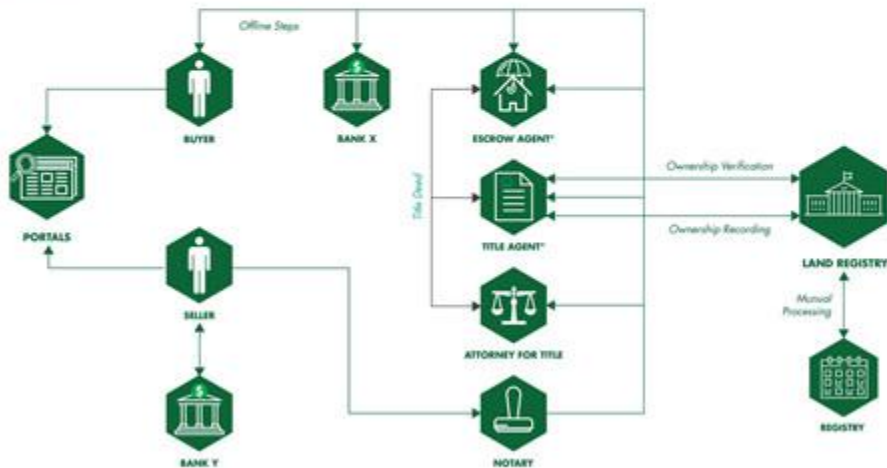
## ZoZo REGISTRY - GLOBAL TITLE REGISTRY

Each property has a unique title that serves as evidence of ownership. The ownership of properties is usually tracked by the recordation of such titles in organized property registries which are managed by regional governmental organizations. As previously discussed, ZoZo aims to develop the ZoZo Registry with the ultimate goal of becoming a global registry for title deed ownership information, which would be made available to worldwide entities, similar to a DNS system for website domains.

### WITH ZoZo AND BLOCKCHAIN

Domain Name Servers (DNS) are the Internet's equivalent of a phone book. They maintain a directory of domain names and translate them to Internet Protocol (IP) addresses.

As the ZoZo Registry evolves into a system that enables buyers to validate real estate transactions legally, ZoZo intends to include a modular system to allow regional governments to provide country-specific rules and regulations related to real estate transactions that would be incorporated into the ZoZo's smart contracts platform. The set of smart contracts developed to date are able to assist executing a real estate purchase within the current market and legal infrastructure in California, i.e. in compliance with rules and policies of escrow and title companies and in compliance with the California laws governing the recording and purchase process rules.



# ZoZo PLATFORM V.1

ZoZo consists of multiple software components, as further described below.

## ZoZo REGISTRY - SMART CONTRACTS ARCHITEC- TURE

ZoZo Registry consists of multiple contracts interacting with each other, and follows a microservices architecture approach. Each contract is responsible for a single type of record in the system. Each contract contains functions that allow the creation and modification of records, contract updates and other administrative functions.

### **The list of contracts that have been developed to date and a brief description of their functions are listed below:**

#### **A Title Contract:**

- a. Responsible for storing and updating property metadata on the blockchain; and
- b. The ZZCs are used to unlock the services within the ZoZo platform that would permit creating and updating property records.

#### **B Deed Contract:**

- a. Manages relevant information for Escrow services;
- b. Tracks and initiates the invitation of participants in the transaction (i.e. title agent); and
- c. Requires ZZCs to create and update deed related records. Microservice architecture is a method of developing software applications as a suite of independently deployable, small, modular services in which each service runs a unique process and communicates through a well-defined, lightweight mechanism to serve a business goal.

*Titles*  
Administrator Pub. key [ZoZo]  
DEED CONTRACT

*Deeds*  
Administrator Pub. key [ZoZo]  
IDENTITY CONTRACT

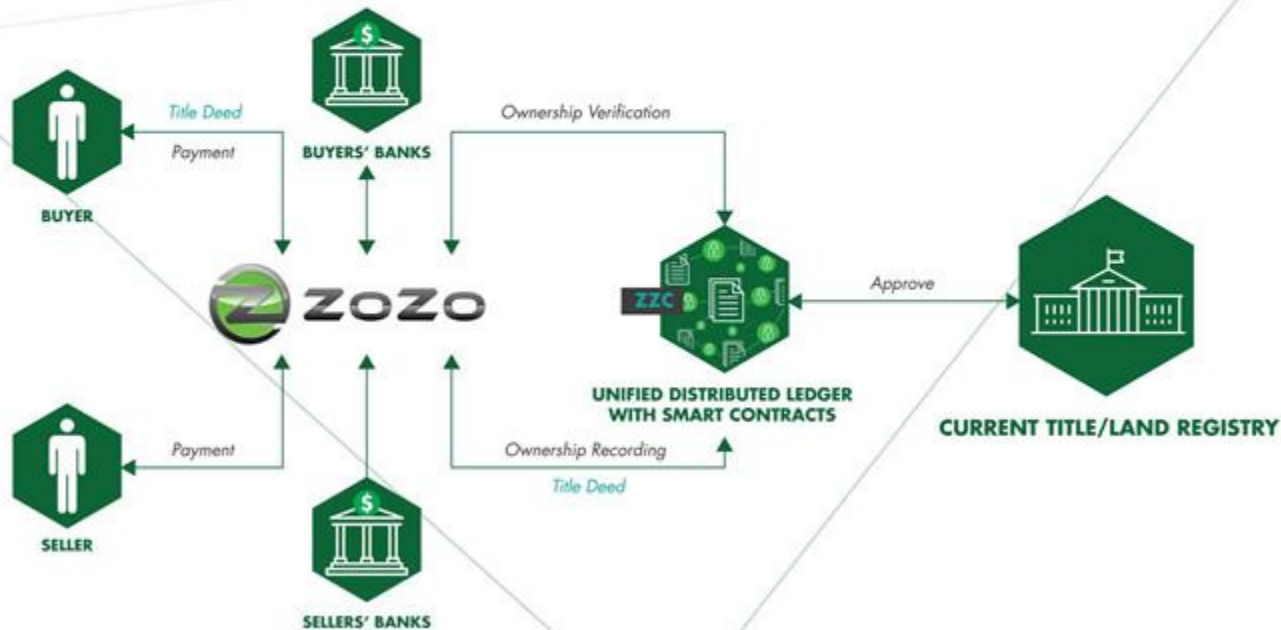
*Identities*  
Administrator Pub. key [ZoZo]  
2. ZoZo PLATFORM V.1

FIGURE 4. Interaction between the ZoZo smart contracts and the real world data.

#### **C Identity Contract:**

- a. Stores multiple records with identity information for all users of the system; and
  - b. Contains KYC features for verifying legal identity.
- Notary Office / Title Company

# WITH ZOZO AND BLOCKCHAIN





**The list of contracts that have been developed to date and a brief description of their functions are listed below:**

**A. Agreements Contract:**

a. Stores instances of various legal agreements (purchase agreements, inspection reports, disclaimers), that need to be digitally signed for Deed transactions.

**B. Electronic Signatures Contract:**

a. Stores digital signatures for all documents, participating in the ZoZo Registry;  
b. Allows to having multiple signatories acting in different capacities in the same document; and

ID ID Name Address Signature Status

Current Owner

DEED

ID Seller\_ID Buyer\_ID Status \* ZoZo\_ID

\* Status:

- waiting for deposit
- security deposit received
- full payment received
- payment released

AGREEMENTS

ID

Doc Type Deed ID

ROLE WHITELIST

Person ID Role

ELECTRONIC SIGNATURE

Agreement ID Role

Signature ID Signature Hash

c. Validates digital signature's format.

IDENTITY

TITLE

FIGURE 5. Smart contracts

architecture.

**C. Payments Contract:**

a. Manages the initiation of payment requests.

b. Tracks status of payment requests.

c. Confirms authenticity of payments using variations of SPV algorithm (Simplified Payment Verification). Specific implementations will vary depending on each payment processor.

**D. Escrow Contracts:**

a. Contains Escrow/Title Agent functionality (adding data about the escrow account number, title transfer signing).

Allows a verified Escrow Agent to lock and release payments.

Individual Parties Contracts: related to a particular real person. Contains KYC features.

The fig. 5 diagram visualizes the information, roles and interaction between each of the smart contracts, described above.

The following participants are involved in different capacities in the smart contracts:

1. Seller
2. Buyer
3. Broker
4. Escrow/Title Agent (or Notary)
5. Recording Office (or Title Registry)
6. Money Transmitter
7. Real Estate Inspector



# COMPLEMENTARY SOFTWARE COMPONENTS

*ZoZo will seek to develop a number of complementary software components for the ZoZo Registry to accelerate the growth of the network*

## 2.3.1 ZoZo EXPLORER

The contract explorer, ZoZo Explorer, is an open and extensible front end which acts as a gateway for accessing information about properties and transactions in the ZoZo Registry, as well as ZoZo Utility Coins. For more details about ZoZo Utility Coins, please see section 5.

ZoZo Explorer intends to provide a sleek interface, within which users can search within the ZoZo Registry. ZoZo Explorer receives data from two locations: ZoZo's central database, and ZoZo Registry. ZoZo Registry only handles real estate title ownership, while more sizeable data, such as images, property description, purchase agreement content, come from ZoZo's central database (storage may be decentralized in the future). Users view transactions within those databases through ZoZo Explorer.

### **ZoZo EXPLORER GLOBAL LISTING STATISTICS**

Properties

Owners

Transactions

Total \$ spent

\$ spent this payout period

Address

Status Change Purchased by: Value Estimate

FIGURE 6. ZoZo Explorer UI Mockup.

Search

ACTIVE PROPERTIES

Address Status Change Value Estimate

Address Status Change Value Estimate

RECENT TRANSACTIONS

ACTIVE USERS

Name Properties

Name Properties

Name Properties

Name Properties

Ownership



# COMPLEMENTARY SOFTWARE COMPONENTS

*ZoZo will seek to develop a number of complementary software components for the ZoZo Registry to accelerate the growth of the network*

## 2.3.2 API LIBRARIES

ZoZo is developing API libraries to enable easy access to registry data for third-party applications. The libraries interact directly with the smart contracts and do not rely on the availability of the ZoZo website or other centralized components.

## 2.3.3 DATA STANDARDS

ZoZo plans to develop standards for storing real estate title deeds on the blockchain, which would consist of a set of metadata such as the address, owner details, right typology, property typology, coordinates, property condition. The ZoZo team has extensive experience and in-depth knowledge of the real estate market in the U.S., European countries, the Middle East and China. That experience is intended to help build universal data standards, constructed from the metadata enumerated above, that can be adopted globally.

ZoZo standards and developer's APIs are intended to empower an entire ecosystem of real estate applications.

ZoZo has undertaken the challenging mission of developing industry-accepted data standards for real estate transactions, being cognizant of the present obstacles associated with interoperable data and metadata that have been growing in industries such as for example geospatial technologies (Open Geospatial Consortium), electronics (Sematech), medical devices, and other activities.

Typically, interoperability standards definitions proceed most successfully through a strategic mixture of:

Mapping the ecosystem of stakeholders who generate, use, analyze and repurpose the data;

Designing a prototype platform demonstrating the economic and technical costs, risks and inability to reuse or trust data exchanged in its pre-standardized form;

Identifying early adopters and innovative thinkers across the ecosystem for whom the costs and risks are a burden, and to whom or by whom innovative uses of standardized data would be of benefit;

Mapping the transactional flow of data, in a typical use case, in order to see how the data is already defined as standardized by specific processes as "trusted in use";

Extracting the trustworthy data definitions, and creating a concordance (often via APIs) in order to tag trusted data by the process that created or used it;

Developing the technical specifications for qualifying the standardized data and metadata;

Proposing the standard data definitions to the stakeholders who operate, use or rely on the business process; and

H. Seeking ISO or other international standards setting organizational approval of the standards so that ISO-compliant software, hardware and services can expand the supply, demand and utility of standardized interoperable data.



## TRANSACTION PLATFORM V.1. PROTOTYPE WORKFLOW

Below is a description of the main flow of activities expected to occur in the ZoZo platform as currently envisioned for a real estate purchase in California:

Buyer finds a property for sale in the ZoZo DApp.

Buyer provides a flat reservation fee (approximately \$5,000) to ensure that he or she has a legitimate interest in purchasing a property. Broker sends the notification to seller about the offer submitted by buyer and invites the seller to get registered in ZoZo to close the deal. Seller accepts the deposit, and thus the offer. Buyer and Seller both provide KYC/AML documentation. The KYC process is outsourced to a third party provider such as Civic.

Purchase and Sale agreement is generated by ZoZo and sent to the parties.

a. The Title Contract establishes the parameters of the transaction in order to comply with applicable regional regulations.

ZoZo performs ownership verification at ZoZo Registry via Escrow/ Title agent participation at ZoZo's system.

Buyer receives notification that ownership has been verified and signs the agreement electronically.

If the price proposed by the buyer is accepted by the seller, she will proceed to electronically execute the agreement.

If the buyer in connection with the property purchase opted to perform a property inspection (and appraisal), then within seven days, ZoZo would provide, at an additional cost, an inspection report prepared by a third-party service provider.

Money is transferred to an escrow account, set by an Escrow/Title Agent at the dashboard in ZoZo DApp, either in one transfer or X% deposit and Y% in installments. Fiat currency will be used.

ZoZo generates the payment form for Buyer and tracks the payment with its payment processor partner(s).

10. ZoZo marks payment as received on Payment Smart Contract Status once the wire transfer arrives as per notification by the payment processor partner(s).

ZoZo verifies again the ownership at the ZoZo Registry ledger and via third parties such as title company and records the asset transfer on the ZoZo Registry in "Pending" mode, notifies the Recording Office and sends the blockchain hash to the recording office and to all the other parties involved.





# TRANSACTION PLATFORM V.1. PROTOTYPE WORKFLOW

## Prepare property for the transaction.

- a. ZoZo notifies Seller and Buyer that the funds have been received and ownership is clean and "Pending." Sign electronic Transfer of Title Deed with Escrow/Title Agent.
- a. ZoZo generates Title form for Buyer and Seller to sign.
- b. Seller accepts and signs a Title Transfer contract at the Escrow/ Title Agent's Office (or E-notary in the future).
- c. Buyer accepts and signs the Title Transfer contract/
- d. E-notary verification takes place or Title Agent signs the deed.

Transferring property ownership.

14. Escrow Agent submits the sale closing documents to recording office.

- a. Recording office changes ownership records.

- b. ZoZo issues own electronic title deed with blockchain hash

and QR code to the buyer (All the documents collected during the transaction besides the title deed are enforceable. We believe this will be a catalyst for the ZoZo title deed to become enforceable as well).

- c. Recording Office issues the physical Title Deed via mail to the Buyer.

- d. Escrow Agent distributes money to Seller, Brokers and itself and via the dashboard at ZoZo notifies about the completion of this step.

15. Deed Smart contract after the notification from step 11 marks the transaction as "Completed" on the ZoZo Registry (shows transaction ID here).

Post conditions: Property's ownership is changed from Seller to Buyer in ZoZo Registry.

## RECORDING OFFICE

### ZoZo BLOCKCHAIN

Transaction for title XXX has started

Payment, documents signing, ect

Transaction started

Create e-deed

Update title status to locked

Documents processing completed

Deed is executed, title is finalized

E-deed is created

Documents processing

FIGURE 7. ZoZo title issuance and recording within the existing ecosystem.

Deed is approved



# ZoZo PLATFORM V.2 FOR DECENTRALIZED P2P SALES

## OVERVIEW

The following description of technology and processes represents ZoZo's goals for the future and is subject to change based on regulatory and market requirements.

As mentioned previously, the ultimate vision of ZoZo is not merely to operate within the existing real estate legal infrastructure, but to disrupt the legacy system by providing a far superior solution. The ZoZo team has developed an idea for advanced real estate transaction services, provided that the legal environment catches up with this disruptive new blockchain technology. The ZoZo Registry, Property Store and other services will achieve its full promise if and when land registries are modernized to support this technology and recognize the ZoZo Registry as effectuating a binding and legally enforceable change in title. Among the things that need to happen to make this possible are:

Digital signature in public blockchain need to be recognized as legally binding.

An identity system needs to be adopted, it would associate individuals with a specific blockchain address (eID cards with biometry is one of the options).

Each government agency, participating in real estate transaction, should have a smart contract-based API (especially crucial for entities in charge of property taxes estimation and collection).

All records from real estate land registries should migrate to the blockchain.

## SMART CONTRACTS PARTICIPANTS

**Below is a list of the participants that need to be involved in the smart contracts:**

1. *Seller*
2. *Buyer*
3. *Notary or E-Notary or Government Validator*
4. *Broker (optional)*
5. *Real Estate Inspector (optional)*



# ZoZo PLATFORM V.2 FOR DECENTRALIZED P2P SALES

## WORKFLOW

The workflow below gives a high level overview of how a P2P real estate transaction would work:

*Seller lists a property in the ZoZo DApp.*

*Buyer finds a property in ZoZo DApp that matches his criteria.*

*Buyer submits an offer via smart contract to the registry subject to minimum legally compliant conditions (including specifying whether to include an inspection report).*

*Seller accepts an offer by signing it with their digital signature. Intermediaries perform their actions (inspection and other requirements of the smart contract, provided by the buyer).*

*Once the conditions mentioned above are met a smart contract triggers the payment system for Buyer to pay in cryptocurrency (any currency can be supported).*

*Smart contract accepts the payment and transfer the ownership to the new owner on the ZoZo Registry once all terms and conditions are met.*

*As mentioned in (3), we are making the system modular and letting Buyers provide a number of conditions and inspection requirements. In such a circumstance, the third party involved in satisfying the conditions signs the smart contract with a digital signature.*

*System notifies intermediaries*

*Intermediaries carry out their respective actions, and notify the system that their actions are complete*

- 1. Buyer submits offer for property*
- 2. Seller accepts offer*
- 3. Intermediaries*
- 4. Buyer*
- 5. ZoZo Registry on Blockchain*
- 6. Seller*

*Property changes ownership in ZoZo registry Cryptocurrency is moved from Buyer to Seller*

*Figure 7. P2P Transactions in the ZoZo DApp*

ZoZo has a very simple and scalable business model. When a property is purchased on the ZoZo network, ZoZo takes a small percentage of the final purchase price. ZoZo charges real estate brokers per transaction for using ZoZo's technology and tools. Payment will initially be made in fiat currencies, and cryptocurrencies are plan to be added over time in the jurisdictions where it is possible to do so. With a \$340bn market size of all cross-border real estate acquisitions and dispositions trading annually, the addressable market for ZoZo is significant.

The percentage that ZoZo takes from the final purchase price can be smaller than the one currently charged by the existing intermediaries in the real estate disposition process. Future expansions of the ZoZo.com platform plan to eliminate multiple intermediaries, which would progressively decrease transaction cost over time. "Cross-border capital flows to thrive as world grows older", JLL, 2016.



## ZoZo Coins (ZCC)

### INTRODUCTION

The ZCC tokens are designed to be used to unlock a smart contract for title transfer in the ZoZo Registry. ZCC tokens are built on the ERC-20 token standard, which allows for simple integration into users' wallets. The essential and obligatory steps for a real estate acquisition on ZoZo Registry includes the execution of the Deed Contract and Title Contract, which are necessary for the transfer of property title and the recording of the change of ownership. The ZoZo Registry, will require the use of ZCCs to pay the associated "Registry Fees" to record these modification on blockchain.

Using ZCCs in the ZoZo platform is intended to be simple and user friendly. Users would initiate the writing of new data to the ZoZo registry via ZoZo's interface, whether that data would result in the creation of new title, or transferring a title already recorded in the system.

As such, the use of ZCCs will be necessary to access the services provided in the ZoZo platform, as it would act as:

- A uniform method of settlement for interacting with ZoZo Registry, which reduces time delays and independence from any particular fiat currency.
- A decentralized registry requires some barrier to entry to initiate transactions, otherwise the ZoZo network would be overloaded with unnecessary records. The usage of ZCCs is crucial for the network in order to prevent spam. If requests to write new information to the network were free, attackers could repeatedly send faulty requests; this 'blockchain bloat' would prevent genuine requests from reaching validators in the network.





# ZoZo Coins (ZZC)



## REGISTRY FEES

As defined in section 2.2.1, the following contracts will require fee payment:

- Title contract — for all operations, that require creation and updates of title records.
- Deed contract — for all operations, associated with creation and updates of deeds.

The company will develop a method to insure that the Registry fees remain within a reasonable range relative to comparable services priced in fiat.

## TOKEN FLOW OVERVIEW

The specific flow of ZZCs would be slightly different for users who already own ZZCs than for those who do not at the time of the property purchase. The users who do not own ZZCs have to buy them in the third party marketplaces in order to transact.

Below is a description of the basic flow of ZZCs:

Once a Buyer has selected a property to buy, it will initiate the transaction via the ZoZo website/application.

As Buyer goes through the KYC process, an identity record will be created in Identity contract.

Buyer would then make a Reservation fee payment in fiat and pay the Registry Fees in ZZCs (see section 5.2).

Records in the Deed and Title Contracts are intended to be unlocked and executed as the purchase process occurs.

The collected ZZCs are intended to be distributed as per section 5.5

## ECONOMIC MODEL

The ZZCs have a fixed supply of 32 million. The entire supply of tokens will be issued at the beginning of the token sale. New tokens cannot be created and the existing ones cannot be destroyed. Therefore, as demand rises, there is no corollary increase in supply.

The ZZC will be necessary to utilize the ZoZo Registry regardless of whether it is accessed through the utilization of ZoZo services or a third party interface.

## ZoZo REGISTRY FEE USAGE

The ZZCs paid for the Registry Fees would be distributed as follows: 1/3 would be distributed to the company and 2/3 would be added to the Network Growth Pool (as defined in section 5.6).



# ZoZo Coins (ZCC)



## NETWORK GROWTH

Initially, 35% of the total supply of ZCCs would be reserved for network growth. Additionally, the network growth pool will receive 2/3 of ZCCs collected from all the transactions as described in section 5.5. The network growth pool of ZCCs would be used to incentivize the engagement of users in the platform.

ZoZo users would receive rewards in ZCCs when undertaking certain actions on the platform. For example, when a broker, home buyer, or home seller joins the platform, they would receive a reward in ZCCs for doing so. This reward system intends to encourage the adoption of the ZoZo platform worldwide. As more users join the platform, there could be an associated increase in the number of real estate transactions performed on the platform.

ZoZo also intends to make distributions of ZCCs from the network growth development pool to governments and other large institutional actors to incentivize the utilization of the platform. ZoZo expects that this would accelerate the realization of ZoZo's vision — the acceptance of the ZoZo Registry as a universal, decentralized legal ledger for real estate ownership.

## DONATIONS

ZoZo is aware that blockchain technology is not yet mature enough to handle the load implied by millions of users, or billions of transactions. While current network performance and infrastructure is predicted to be sufficient for the future expansion and utilization of the ZoZo Registry, ZoZo recognizes the importance of continued protocol-level development to help achieve the ubiquitous usage of blockchain technology and to support the load implied by millions of users and billions of transactions.

In pursuit of our vision, we are reserving 15% of the total supply of ZCCs for donations to different organizations within the blockchain ecosystem to support the improvement of blockchain infrastructure so that it can also meet the transactional requirements of ZoZo and the ZoZo Registry at scale. As part of this effort, ZoZo plans to donate to the foundations such as Ethereum Foundation to support their research and development towards scalability. Additionally, ZoZo plans to make donations to support educational efforts in blockchain. ZoZo also intends to support hackathons, Solidity educational programs, and blockchain courses.

The Donation Tokens will be distributed to foundations selected by the company within three months after the crowdsale end date, on the condition that the Donation Tokens will be locked for twelve months after the crowdsale end date. After they are unlocked, the Donation Tokens can be used by the foundations as follows:

- A. *Support of development of blockchain and widespread integration.*
- B. *Support of research towards blockchain scalability and identity.*
- C. *Support of education efforts in blockchain technology.*



## ZoZo Coins (ZZC)

### COMPANY

40%, or 4,8 million of the total supply of ZZCs is intended to be reserved for the company under the following conditions:  
1.8 million Development Coins (ZZCs) will be immediately available for use by the company;  
1 million Development Coins will be locked for 12 months from the Crowdsale End Date;  
1 million Development Coins will be locked for 24 months from the Crowdsale End Date;

Once unlocked, the company reserves the right to use the Development Coins for any purposes at its sole discretion. If the Company elects to sell any of the Development Coins, the Company will sell such Coins for a price no less than the Price Per Coin, and the company may elect to provide Bonus Coins to the purchasers of such Coins, but the bonus rate will not exceed 10%.



# CONCLUSION

ZoZo's vision is to ultimately enable a global real estate market with a unified real-time purchase interface and a decentralized title registry. It is being designed to allow real estate assets to become more liquid while providing users with greater control over the transaction process. To achieve that goal, ZoZo intends to further the development of a new ecosystem of token holders, brokers, governments and end users incentivized to support the transition to a seamless, secure, and globally recognized real estate transaction network.

ZoZo expects that if it succeeds in carrying out its vision the following will occur:

It is anticipated that brokers and real estate corporations will progressively start using the ZoZo platform to access foreign buyers in an easier way and to be able to close transactions nearly instantly and securely online.

Governmental entities, notaries and title companies need a system to transfer data among each other and combat fraud and, in some cases, corruption in global real estate markets. ZoZo proposes that governments could use the ZoZo platform to improve the transparency of local real estate markets and therefore improved attractiveness for foreign investors.

*Finally, most importantly, the consumers — buyers and sellers — will be able to buy and sell real estate assets faster, cheaper, and more securely.*

# ZOZO COIN ALLOCATION

## ZZC TOTAL SUPPLY 32,500,000 ZZC

**63%**  
MINING  
20,475,000  
ZZC



**37%**  
PRE - MINE  
12,025,000  
ZZC

## PUBLIC ICO

**60%**  
PUBLIC SALE  
7,215,000  
ZZC



**40%**  
COMPANY  
RESERVED COINS  
4,810,000  
ZZC







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