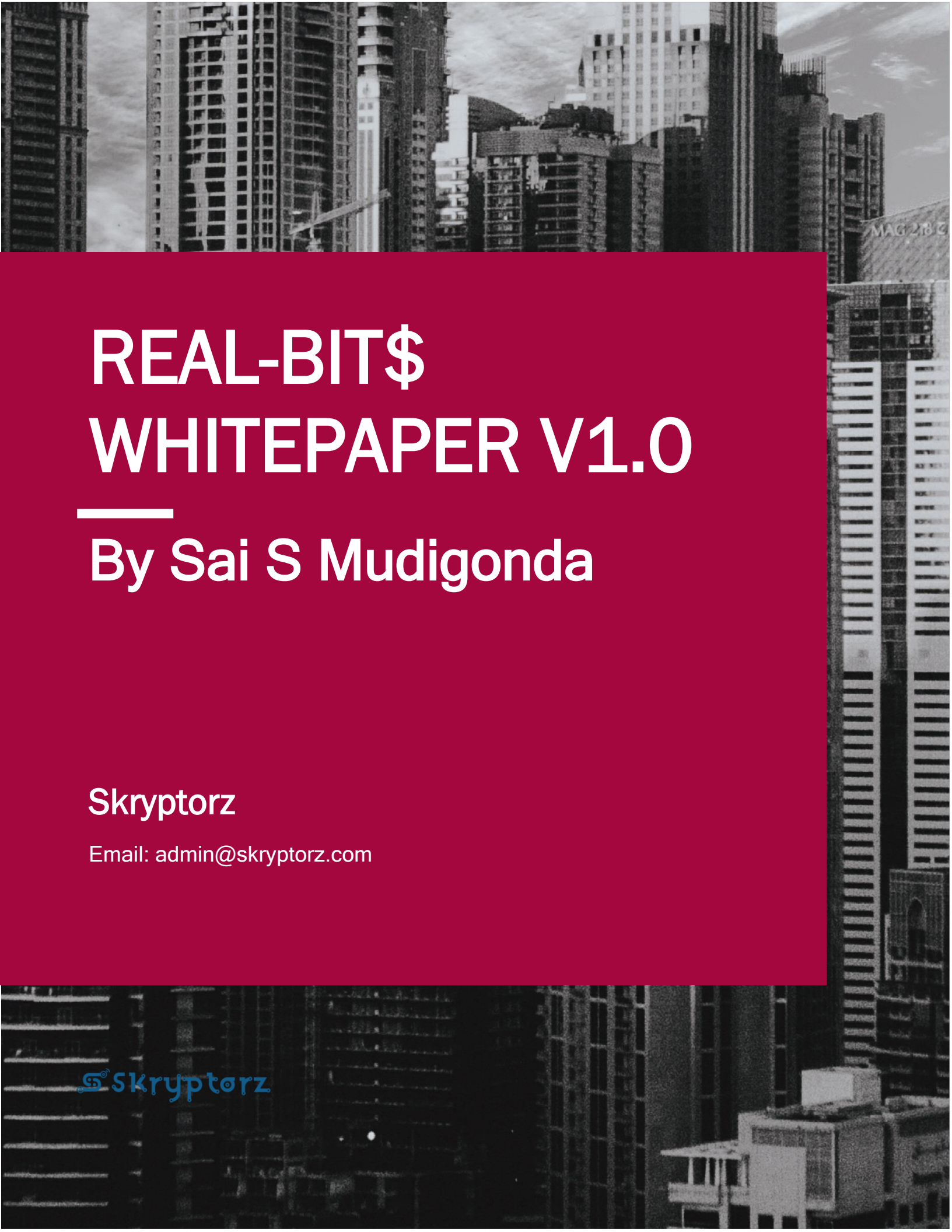

REAL-BIT$ WHITEPAPER V1.0

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INTRODUCTION

BACKGROUND

From time immemorial, there have been three basic things considered as the bare necessities for man to live a comfortable life, namely – Food, Clothing and Housing. While food and clothing are required by a person, housing evolved to become an investment instrument, meaning, it has become something the rich and nobleity used as a means to secure returns in the forms of rents and tax. Many a war have been waged for property per se for example, monuments of religious or cultural significance, buildings (forts, palaces), bridges and others. The wealth of the earlier kingdoms and generations was measured in terms of gold and other precious metals, cattle and of course in terms of land and buildings they owned.

While the purpose of this whitepaper is not political, there is a need to understand why the need and the subsequent genesis of Bitcoin and likes. In his book, “The Wealth of Nations”, Adam Smith, purports that the economic system is automatic, and when left with substantial freedom, able to regulate itself, which he called the “invisible hand”. The ability to self-regulate to ensure maximum efficiency is limited by externalities, monopolies, tax preferences, lobbying groups, and other “privileges” extended to certain members of the economy at the expense of the others. Numerous revolutions, wars and revolts in history have been waged to reduce this discrepancy and create equality. However, the platform where these wars are being waged has transformed from a mere physical field to a digital, virtual one and the whole paradigm and definition of such terms has dramatically changed.

BITCOIN

An effort in this direction in our modern times is Bitcoin created by a mysterious unknown person/group named “Satoshi Nakamoto”. It is a cryptographic virtual currency in which encryption techniques are used to regulate the generation of units of currency and verify the transfer of funds, operating independently of a central bank. While the banking system itself is fairly established and regulated,

a number of reasons have been quoted for the need and emergence of a virtual currency including the amount of charges levied by a number of intermediary banks like SWIFT, ACH, CHAPS and others, distrust in the banking system, etc.

CROWDSOURCING

Crowdsourcing is defined as the practice of obtaining information or input into a task or project by enlisting the services of a large number of people, either paid or unpaid, typically, via the Internet. There have been numerous articles, books and talks about how the power of diversity creates better groups, firms, schools and societies. The wisdom of the crowd and the use of knowledge from the society helps build better businesses. This has been illustrated in many successes in the recent times including the open source revolution, Wikipedia, etc. The same paradigm has been applied to finance and termed as Crowdfunding.

CROWDFUNDING

Crowdfunding is defined as the practice of funding a project or venture by raising many small amounts of money from a larger pool of people, typically via the Internet. While this practice has been in vogue for many generations including how mutual funds, stocks and other financial instruments fundamentally work, the same has not been accessible to smaller businesses, inventors without good financial background before the dawn of the Internet revolution. There have been many recent successes in this arena including sites like Kickstarter, Indiegogo, etc.

Successful crowdsourcing involves satisfying the uppermost tier on Maslow's hierarchy of needs. People are drawn to participate because some psychological, social or emotional need is being met. And when the need isn't met, they don't participate.

REAL ESTATE INVESTMENT TRUSTS

Real Estate Investment Trusts (REITs) are defined as companies that own or finance income-producing real estate in a range of property sectors. These companies have to meet a number of requirements to qualify as REITs. Most REITs trade on stock exchanges and they offer a number of benefits to investors. Modeled after mutual funds, REITs provide all investors a chance to own valuable real estate, present the opportunity to access dividend-based income and total returns, and help communities grow, thrive and revitalize.

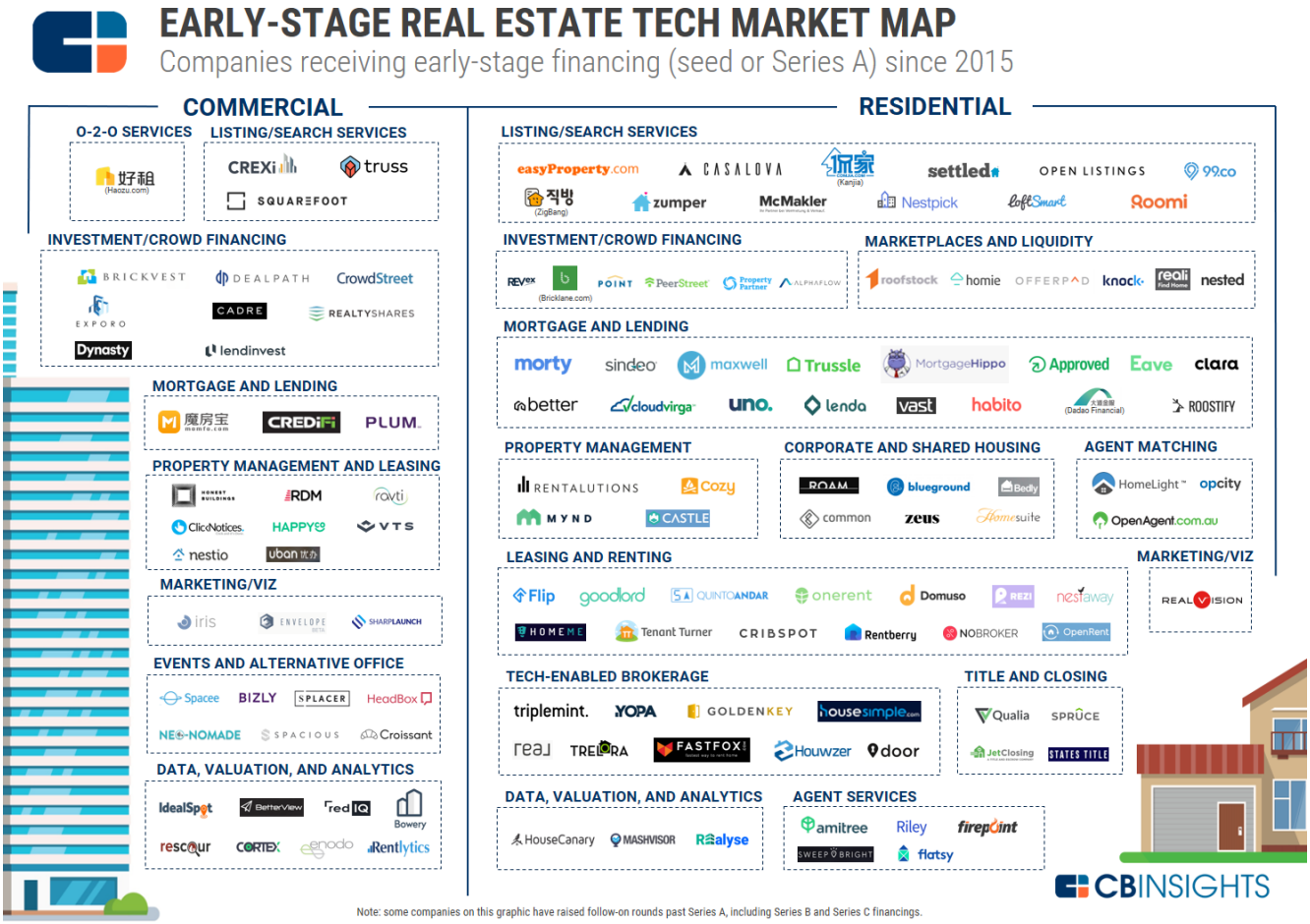
REITs allow anyone to invest in portfolios of real estate assets the same way they invest in other industries – through the purchase of individual company stock or through a mutual fund or exchange traded fund (ETF). The stockholders of a REIT earn a share of the income produced through real estate investment – without actually having to go out and buy, manage or finance property.

Most REITs operate along a straightforward and easily understandable business model: By leasing space and collecting rent on its real estate, the company generates income which is then paid out to shareholders in the form of dividends. REITs must pay out at least 90 percent of their taxable income to shareholders—and most pay out 100 percent.

PROPERTY TECHNOLOGY

Real estate technology or Prop Tech is defined as an economic industry composed of companies which use technology to make real estate transactions more efficient. It generally refers to startups trying to target every segment of the property chain, attempting to disrupt and improve how the current market players like, developers, buyers, sellers, renters, investors, and real estate professionals design, construct, market, discover, transact and operate real estate.

The Prop Tech startup landscape as of 2017 is illustrated in this infographic from CB Insights here:



According to MIPIM, world's leading property market and real estate exhibition, Prop Tech is categorized as follows:

- Smart buildings/IoT (Internet of Things)
- Smart city sustainability
- Marketplace
- Crowdfunding
- ConTech (Construction Technology)
- 3D/VR (Virtual Reality)
- Data and research analysis

The categories and the participants in MIPIM are shown in the infographic here:

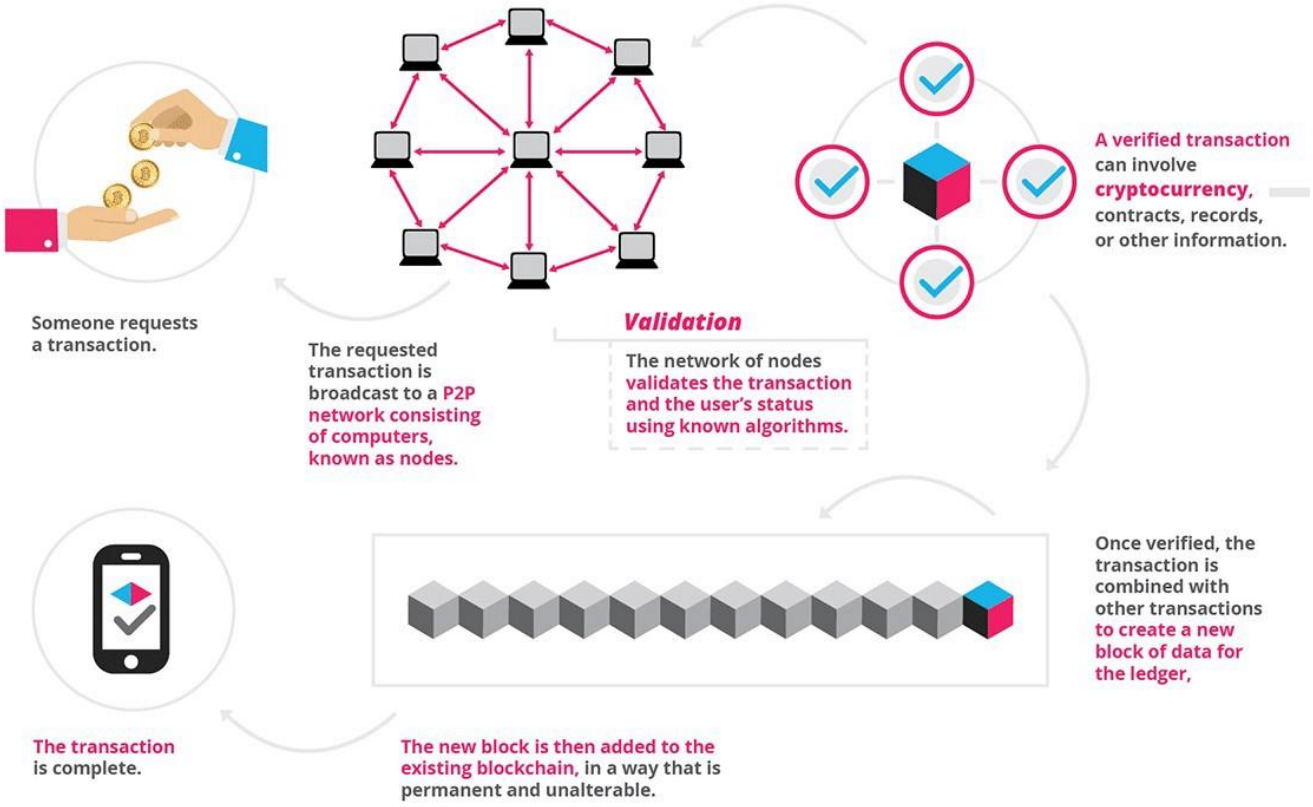
BLOCKCHAIN

Although Bitcoin and other cryptocurrencies are hogging the limelight, the real winner in this race is the underlying technology which runs all these said virtual currencies. Blockchain is defined as a continuously growing list of records called blocks which are linked and secured using cryptography. Each block typically contains a cryptographic hash of the previous block, a timestamp and transaction data. By design, a blockchain is inherently resistant to modification of the data. It is an open distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way.

According to Don & Alex Tapscott, authors Blockchain Revolution (2016), the blockchain is an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value. A network of so-called computing “nodes” make up the blockchain. A node is a computer connected to the blockchain network using a client that performs the task of validating and relaying transactions. The node gets a copy of the blockchain automatically upon joining the blockchain network. Hence, each node will have a copy of the blockchain making it secure. The most important characteristics of blockchain are

- Secure
- Decentralized
- Immutability

The following figure from Blockgeeks shows how a transaction in blockchain works:



There are mainly three different types of blockchains, namely

- Public blockchains
- Private blockchains
- Federated or Consortium blockchains

The various features and differences between these types of blockchain is illustrated in this table:

Feature	Public	Private	Federated/Consortium
Structure	Decentralized	Centralized	Partially decentralized
Access	Open Read/Write	Permissioned	Permissioned

Speed	Slower (~10 minutes)	Faster (same as a transactional system)	Vary by the number of nodes
Consensus	Proof of Work Proof of Stake	Pre-approved	Pre-approved
Identity	Anonymous	Know identities	Known identities
Use cases	Crypto economy	Reference Data Management	Secure data sharing
Examples	Bitcoin, Ethereum, Dash	MONAX, Multichain	R3, EWF

THE PROBLEM

Real Estate investments have always been considered as ill-liquid and non-traded. Real Estate Investment Trusts (REITs) are an alternative to this problem but they are also not devoid of issues. With REITs, there is no control over where your money is invested, especially, if you are interested in a hands-on approach and would like to see, touch and smell each property that you invest in. Individual property ownership comes with its own set of hassles including property maintenance, tenant issues, taxes, etc.

Crowdfunding is an interesting concept being exploited in the recent years for real estate investing. Real-estate projects that are backed by crowdfunding websites are not required to distribute 90% of the rental income to investors as in REITs. The real estate crowdfunding space is not very regulated as in by organizations like SEC and FINRA. Also, not many options exist for investors who are non-accredited but have an appetite for investing in commercial, residential or vacant land.

THE SOLUTION

We propose to solve all of the above stated problems faced by investors using the Real-Bit$ platform. The Real Bit$ platform, henceforth referred to as “the platform” is a culmination of the following technologies and lines of business:

- Real Estate
- Crowdfunding
- Blockchain

- Prop Tech

Initially, the platform will start operating in the state of North Carolina concentrating mainly in the Greater Charlotte metro area deals before expanding its operations to other states and nationwide.

HOW DOES IT WORK

The following is the lifecycle of a real estate crowdfunded project on the platform.

STEP 1: Find Property: The first step in the process is to identify the properties that are fundable and have the best ROI. Some of the features that we look for include:

- Minimum risk
- Maximum returns
- Best appreciation
- Best location

STEP2: Due Diligence: The second step is to conduct the necessary due diligence for the sponsor and the project before listing on the platform. This procedure includes:

- Criminal background check
- Credit worthiness check
- 5 years sponsor tax returns on file
- AML/KYC form – Anti-Money Laundering, Know Your Customer forms
- Banking relationships
- Pro forma title policy – certain pro forma title insurance policy issued by the Title company

The due diligence process will be done by a Board constituted by the platform which will include real estate lawyers, civil engineers, auditors or accountants, real estate agents and others.
The due diligence process for each deal from the promoters will include:

- Financial model
- Loan documents
- Operating agreement

- Operating financials
- Purchase & Sale agreements
- Proposed deal structure
- Budgeting documents
- Certification of Formation
- Tax & Utility bills
- Property photos
- Site/Floor plan
- Lease documents
- Public & Private permits
- Approvals from County
- Estoppel certificate
- Lease/sale comps
- Tax returns for borrowing entity
- Operations & Maintenance agreements

This list is not comprehensive and other documents will be added as and when deemed necessary depending on each deal. The due diligence process will include guarantees and warranties similar to the ones included in RESPA (Real Estate Settlement Procedures Act).

The next step after the documentation checkpoint in the due diligence process is location. The following factors will be taken into consideration when deciding whether a location is suitable for investment by our platform. We will call this our “Location Score”.

- Walkscore
- Bikescore
- Transitscore
- Jobscore
- Economic activity
- Business corridor
- Mobility services
- Adaptive reuse/Brownfield site
- Green building practices
- Minimized site disturbance
- Fresh food produce

STEP3: List Property: After the first two steps are successful, the property is approved to be listed. Only curated properties will be listed on the platform and will be open to investors. In the property listing, the following details need to be provided:

- Asset type – Residential, Commercial, Industrial, Retail, Mixed-use
- Deal structure – Equity, Debt
- Project Phase – Not started, Started, Under construction, Newly constructed, Number of years after construction
- Key deal points – What attracts the investors to this deal
- About the Market – The state of the real estate market in the proposed area
- Location Score
- Social cause – Why the investors should invest here?
- Risk factors – the list of risks in the particular project
- People – Key people bio behind the project
- Eco-friendliness – This will include if the project conforms to standards like Energy-efficient, Energy-star rating, LEED certified, Carbon-neutral, etc.

STEP4: Campaign: Once the property is listed on the platform, a funding campaign will be run with the initiation and backing of all the stakeholders involved in the deal. Initially, the campaign will be run for 30 days with a possible extension of 15 days more if the goal is not reached and if there is a definite possibility that the campaign goal may be reached given the extension period.

The advertising and promotion costs will be equally shared by the platform and the promoters of the project. There will be a “campaign manager” appointed for each campaign who is responsible for getting the word out and attracting investors from all possible means including all social media platforms, physical fundraising activities, supporting local charities and community events, etc.

The budget for each campaign will be decided by the Board in compliance with the promoters.

The individual campaign page will include the following details:

- Funding goal amount
- Term – locking period
- Projected IRR in percentage

- Location Score Index
- Investors type – Accredited or non-accredited
- Offering open/closed
- Number of backers/investors
- Financial reports
- Progress reports

STEP5: Closing: If the campaign is successful, then the property needs closing. It will involve the following steps:

- Title Agent as Escrow agent
- Escrow agreement
- Legal entity
- Signing authority verification
- Final Walkthrough
- Papers Signing

However, for the closing to be successfully done, the following needs to be checked thoroughly from the platforms side:

- The contract of sale has been properly executed
- Receipt of most recent title insurance policy
- Updated survey report
- Receipt of true copies of all leases
- Review of new environmental report
- Termination notice conditions and due diligence deadline
- Delivery of all tenant estoppels
- Review of the seller's books and records
- Confirmation of zoning compliance
- Search for any outstanding tax cases or liens

The following needs to be checked from the seller or the promoters side:

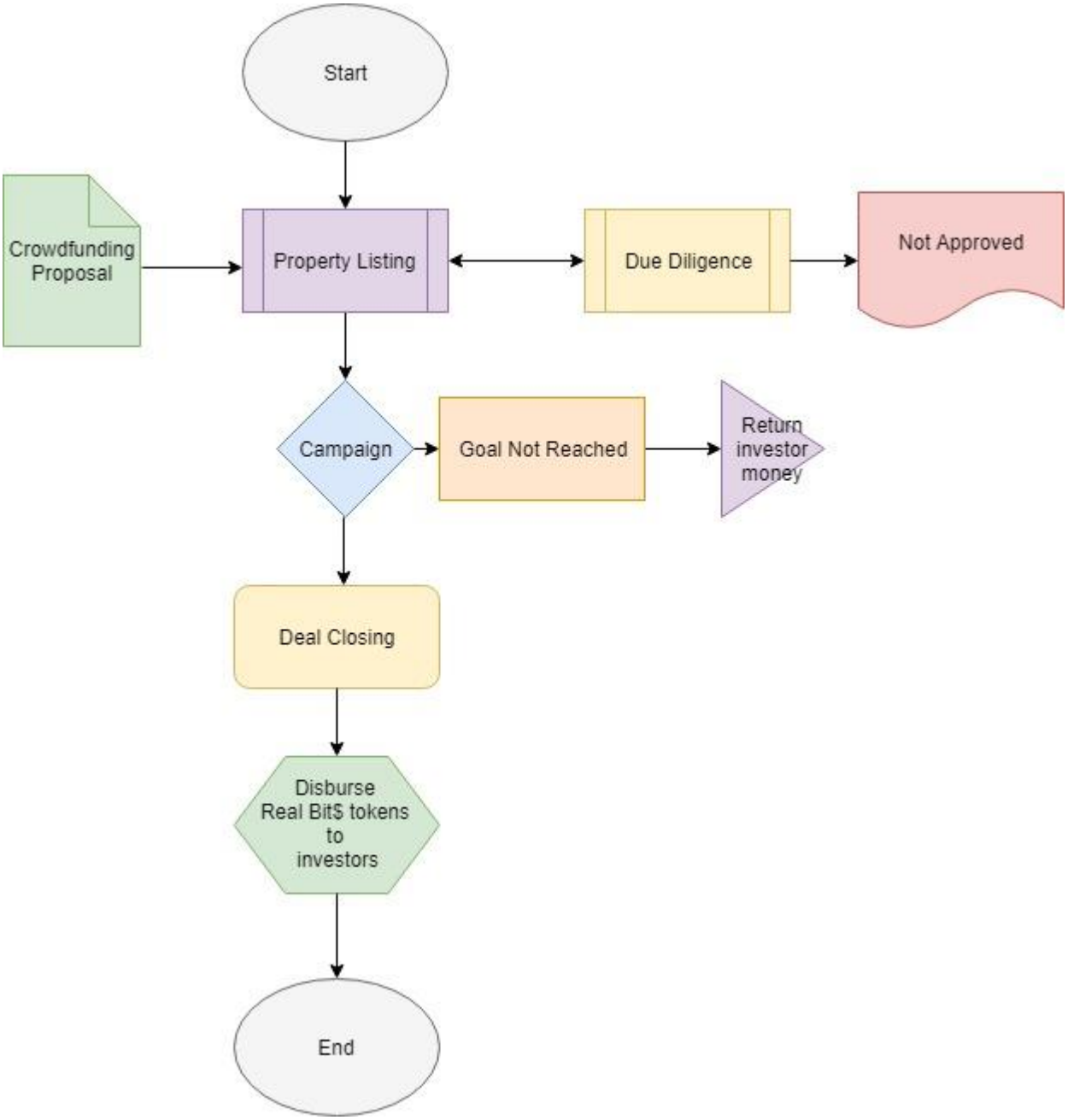
- The contract for sale has been properly executed
- Buyer has delivered down payment to escrow agent
- The escrow agent has deposited the money in a segregated interest-bearing account
- Filed a response to any objections to the title and survey report
- Execution of assignment and assumption of leases by buyer

The closing documents may include:

- Assignments and assumption of leases
- Deeds
- Environmental reports
- Assignments of liability
- Zoning disclosures
- Warranties
- Other documents as necessary

This procedure listed above is the lifecycle of a typical campaign that happens on the platform. The equity or debt held in the hands of each investor is designated in the form of crypto-currency tokens. The amount of equity is equivalent to the number of shares held in a particular property. Initially, the price of each token or share will be equal to $ 1.00 (one USD).

Lifecycle of a Real Bit$ Campaign



BACKGROUND PLATFORM

The Real-Bit$ platform will use Blockchain to run the back-end operations of the crowdfunding campaign lifecycle listed in the earlier section. Ethereum Blockchain uses something called “Smart Contracts” which will be used.

A smart contract is a computer protocol intended to digitally facilitate, verify or enforce the negotiation or performance of a contract. Smart contracts allow to exchange money, property, shares or anything of value in a transparent, conflict-free way while avoiding services of a middleman.

The platform backend will use something called a DApp (Distributed App) where the backend code will be running on a decentralized peer-to-peer network. The advantage of running it decentralized is that apart from the platform, other peers in the network will be able to make changes to the smart contracts.

Initially, the platform will only include the Title Deed as the smart contract, which, will have to be authenticated and approved by other peers. The other peers in the network can be:

- Seller
- Broker
- Escrow/Title Agent (or Notary)
- Title Registry
- Money Transmitter Bank
- Real Estate Inspector

The platform will work seamlessly with legacy title transfers that are in practice currently under different county and city jurisdictions. Once, the platform gains traction, the blockchain based title transfers and deeds will be implemented taking all stakeholders into confidence.

Real Bit$ using Blockchain

MONEY MATTERS

Lots of money changes hands in the real estate industry. As the complexity of the deals and the number of actors in the deal increase, so does the cut each one takes from the pie. It is of primordial importance to keep track of each and every transaction that happens from the initiation to the closing of a real estate deal.

The number of investors increase when we add crowdfunding to the mix and so does the complexity of maintaining the records. Hence, it becomes apparent that latest technologies like Blockchain need to be used to keep the data immutable and devoid of tampering.

On the Real Bit$ platform, when a seller decides to list his property for raising funds from the crowd, we take a 2% cut of the property value as **Origination Fees**. This value is less than the traditional value of 6% charged by real estate agents. This is made possible by hiring a licensed real-estate agent for the state of North Carolina on our payrolls to work on a steady list of incoming deals. Also, we will ensure deal flow by establishing strategic relationships with builders of repute tying them to the platform.

At the initial stage of operations, the users will be free to register on the platform. Once they are comfortable with the inner workings of the platform, if and when they decide to put their hard-earned money into a particular deal, we take a percentage cut as **Investor Fees**. The range for this fee would be between a minimum of 0.5% to a maximum of 1.0% of their investment. The percentage spread is determined by the amount invested and the deal size.

There will be two types of deals available for investors, namely, Equity and Debt. For each type of deal, we charge different fees. For equity deals, a cut of 10% will be taken from investor profits before disbursing the rest of it to the investors. For debt deals, a cut of 1% will be taken from the interest earned. The rest of the interest will be spread to the investors.

To illustrate the various fees charged and the interest and equity percentages earned, we will explain it with a hypothetical example.

Example1: Equity Deal: A seller proposes to raise funds for a property worth $1,00,000. When the deal is published, we take a cut of 2% as origination fees equivalent to $2000. Let us suppose the deal attracts 100 investors each willing to put in a $1000 amount into the deal. From the investor fees of 0.5%, the earnings would be 0.5% of $1000 each, which is $5 times 100, which is the number of investors giving us $500. Let us suppose the property is sold after a holding period of 18 months at a price of $1,10,000. The total profit on the deal would be $10,000. From the profit spread, we take a cut of 10% or $1000. From the rest of the amount, which is $9000, each investor earns $90, since, it is equally spread among 100 investors. The ROI for the investor after a holding period of 18 months is 9.0% which is much better than what banks typically offer. The total earnings by the platform will be the addition of origination fee, investor fee and equity spread, which after calculation yields $3500.

Property worth	$1,00,000
Origination fee (2%)	$2000
Investors	$1000 * 100
Investor fee (0.5%)	$500
Selling Price	$1,10,000
Total profit	$10,000
Equity spread (10%)	$1000
Profit per investor	$90 * 100
Total earnings by Real Bit$ (Origination fee + Investor fee + Equity spread)	$2000 + $500 + $1000 = $3500
Investor profit (ROI)	9.0%

Example2: Debt Deal: Let us use the same example as above for a Debt deal. A seller wishes to raise $1,00,000. Let us suppose we have the same number of investors as earlier, which is 100 investing $1000 each. Let us suppose the debt is extended at the rate of 3.5% for a fixed period of 15 years. This yields a monthly interest of around $700. The total amount to be paid at the end of the term would be $1,28,679. The total profit made would be $28,679. From this, we take a 1% cut from the debt spread, which is roughly $300 per month. The rest of the amount will be distributed to the investors.

TOKENS AND COINS

A cryptocurrency or coin is a unit of value that exists on its own blockchain like Bitcoin or Ethereum.

A token is a unit of value that is created on a blockchain that acts as a host for it, so tokens do not have their own blockchains. Additionally, tokens give the holder the right to participate in a given blockchain activity.

Each cryptocurrency token embodies a tradable good. The crypto tokens can be used to represent a share in a company or can be used as company board voting rights. They are often used to raise funds in a crowdsale. Hence, they are also referred to as crypto assets or crypto equity.

Crypto tokens are created over an **Initial Coin Offering** (ICO). Popular platforms to raise ICO's include WAVES, NXT, Bitshares and NEM.

In case of Real Bit$ platform, we plan to run our own permissioned blockchain. Also, we plan to release tokens per campaign equivalent to the number of shares in that property. Initially, the price of each token will be $1.00 (USD). In the next phase of implementation, we propose to enable trading of tokens in closed campaigns between the registered users on our own platform. We do not wish to release the tokens to the open market and we won't make them tradable until the holding period of the campaign is completed.

REGULATION & COMPLIANCE

Crowdfunding is the process of raising capital online. There are two types of crowdfunding, namely, unregulated and regulated. Financial return determines whether or not it is regulated. Some features of regulated crowdfunding are:

- Debt (P2P, P2B)
- Revenue Based
- Equity

The booming real estate crowdfunding field was first fueled by the passing of the **Jumpstart Our Business Startups** Act (JOBS Act) in 2012 allowing startups and small businesses to openly market private investments to the public.

Because of the JOBS act, the real estate market has seen various benefits like the increased number of platforms to choose from, investing according to their choice and investment appetite, quickened closure of deals.

The crowdfunding options and their regulations are summarized in this table:

	Original 506 b	Title II 506 c	Title IV Tier 1	Regulation A+ Tier 2	Title III Regulation CF
Started	1982	2013	June, 2015	June, 2015	May, 2016
Max Raise	No Cap	No Cap	$20 M	$50 M	$1 M
General Solicitation Allowed	No	Yes	Yes	Yes	Yes
Online Crowdfunding Platforms Allowed	No	Yes	Yes	Yes	Yes
Unaccredited investors/Limits	Up to 35	No	Yes/No limits	Yes (Only invest up to 10% of AI or NW)	Yes ($2k AI or NW cap)
SEC Regulation	Form D	506 c	Reg A	Reg A	Form C
State (Blue sky) Registration/Review	Yes	Depends	Yes	No	No
SEC Review	No	No	Several Weeks	30 days	No
Annual Audit/Financial Reports	No	No	No	Yes	Yes
Estimated Costs	$25k - $75k	$25k - $50k	$50k - $75k	$75k - $150k	$5k - $25k
Investor Accreditation	Self	Issuer Verified	Self	Self	Self
Suitable For	Seed, Scale Growth	Seed, Scale Growth	Growth	Growth	Seed, Scale

Most real estate crowdfunding platforms fall under one of the categories listed here:

- Broker Dealer (Ex: Realty Mogul, etc)
- Registered Investment Adviser (Ex: Angellist, Funders club, etc)

- Title III Funding Portal (Ex: Fundrise, etc)
- Others (Reg D, P2P lending, etc)

We propose to use Real Bit$ as a Title III funding portal. As a portal, Real Bit$ will not provide any investment advice or make any recommendations about the investments (campaigns in our case) that are on offer.

The portal will perform specific due diligence on the offerings, including criminal background checks on key executives and owners, and checks to prevent fraud (relying on a third-party platform like Crowdcheck).

The portal will provide investor education in the form of a blog with articles written and updated regularly by professional real estate bloggers on roll.

The portal will provide a specific discussion forum similar to reddit, etc., where investors are free to discuss the offerings and campaigns, answer newbie questions, clarify doubts, etc. The forum will however be moderated by the board chosen the Real Bit$ platform which includes persons of good standing in the local real estate community.

While most of the platforms require the investors to be accredited, there are many options opening up for the small investor who is not really accredited. An accredited investor is someone with a net worth of at least $1,000,000 excluding the value of one's primary residence, or have at least $200,000 each year for the last two years (or $300,000 combined if married) and have the expectation to make the same amount this year. The term "accredited investor" is defined in Rule 501 of Regulation D of the SEC. The platform intends to provide investment opportunities to both accredited and non-accredited investors using Reg CF or Title III offerings.

SOFTWARE COMPONENTS

The platform is being developed as a mobile-friendly responsive website. We don't intend to publish a mobile app in the early stage of the platform launch. The components used for building the website include:

- HTML
- CSS

- JavaScript
- Node JS
- React JS
- Webpack for packaging

The backend for the platform will run a Ethereum blockchain. For this, the following components will be used:

- Geth Ethereum node
- Truffle framework
- Solidity programming language
- Web3 JS for front-end contracts
- Mist, Metamask for Crypto-wallet

A private blockchain explorer will be incorporated into the web front-end to view all the blocks being added to the private Ethereum blockchain for transparency similar to Etherscan, Etherchain, Ethercamp, etc.

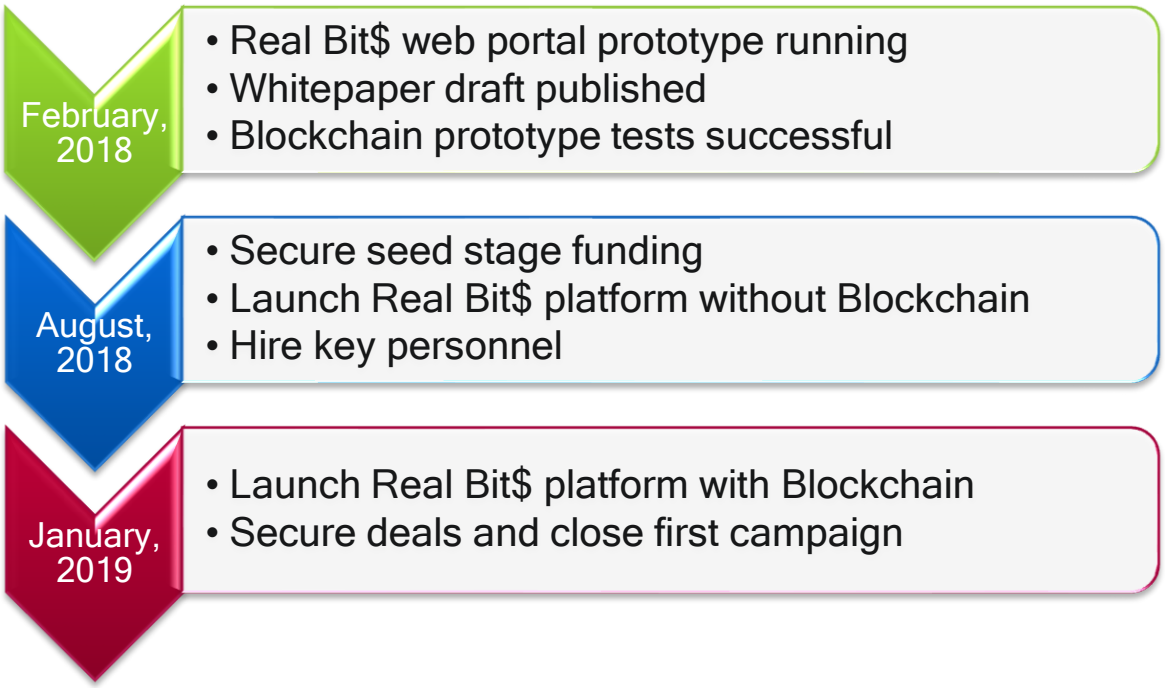
A relational database like Mysql, SQLite or MariaDB will be used to store all the investors information, campaign information and other data. A Nosql database is proposed to be used at a later phase of the project. The blockchain will only be used during the **Closing** phase of a campaign.

The website will be hosted on a cloud service provider like:

- AWS
- Google Cloud
- Rackspace Cloud
- DreamHost

For the purposes of testing, a development server will be created and will be separated from the production server. A load balanced architecture with high availability will be used for the servers. For this setup, Nginx webserver will be used in combination with Apache as a reverse proxy.

TIMELINE


February, 2018
• Real Bit$ web portal prototype running
• Whitepaper draft published
• Blockchain prototype tests successful
August, 2018
• Secure seed stage funding
• Launch Real Bit$ platform without Blockchain
• Hire key personnel
January, 2019
• Launch Real Bit$ platform with Blockchain
• Secure deals and close first campaign