WHITE PAPER V 1.5

MEDIBITCOIN- STO PROJECT

CONNECTING PATIENTS SEEKING 2ND OPINION WITH CONSULTATIVE HEALTHCARE PRACTITIONERS VIA BLOCKCHAIN-BASED PLATFORM OFFERING TIME, SECURITY & COST-EFFECTIVE BENEFITS

MEDIBITCOIN- STO PROJECT

PREPARED BY

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WHITE PAPER v 1.6 (working draft)

A **white paper** is an authoritative report or guide that informs readers concisely about a complex issue and presents the issuing body's philosophy on the matter. It is meant to help readers understand an issue, solve a problem, or make a decision.

The **purpose of a white paper** is to advocate that a certain position is the best way to go or that a certain solution is best for a particular problem. It aims to influence the decision-making processes of current and prospective contributors.

"Creative destruction threatens power. This is why disruptive innovations require new models of thinking to truly enable new technology to reach its potential in a competitive market."
~Tim Wu, The Master Switch[1]

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[1] Tim Wu, The Master Switch: The Rise and Fall of Information Empires (2010, Atlantic Books) Chapter One

DISCLAIMER

This White Paper is strictly for the purpose of presenting our project to the contributors. This document aims to exhibit the functionality and operability of Medibitcoin STO Project. Any part thereof, and any copy thereof must not be taken or transfer to any country where distribution or dissemination of a Security Token Sale (STO) similar the one explained in this White Paper is forbidden or restricted. MEDIBIT Tokens (MDB) are created with the purpose of utility and do not have a performance outside the Medibit Platform. This White Paper is not aimed to constitute a description or offer any advise/suggestion/recommendations for investment. As is the case with any project/STO projects, risks and uncertainties are associated with MEDIBITCOIN Network LLC business, projects and operations, MEDIBIT Tokens, MEDIBIT Token Sale (Pre-STO and STO, both), Medibit-Decentralised applications (Medibit-DApp). This White Paper does not compose or form part of any suggestion or any advice to sell, or any solicitation of any offer made by MEDIBITCOIN LLC to purchase any MDB or provide any help and/or give advice to make investment decision.

PASSION IS ONE GREAT FORCE THAT UNLEASHES CREATIVITY. ITS YOUR PASSION THAT MAKES YOU TAKE RISKS."

ABSTRACT

MEDIBIT Platform is an Ethereum-based blockchain platform regulated by smart contracts and made up of 4 essential components. The platform supports the global mobile healthcare [2] (m-healthcare) community by building and creating solutions devoted to improving the quality of self-managed [3] healthcare across the globe. The blockchain technology, fundamentally a distributed database, gives the platform the power to address the challenges faced by the mobile healthcare industry.

MEDIBIT plays a foundry role in evolving the way people will manage their health in near future.

MEDIBIT Token (MDB) an ERC20 Token, will be the first cryptocurrency that uses a decentralised healthcare consultation platform. It transparently rewards patients and mobile healthcare practitioners who make contributions benefiting the community.

The project team strongly believes in building a digital marketplace that will fall into the hands of the people allowing them to self-manage their health as needed. This in return would be resulted in the disruption of the existing mobile healthcare industry and the creation of new sectors in the short and long term. Looking forward, the project owners expect the platform to drastically improve self-managed healthcare habits, hence improving the quality of life for individuals resulting in improved overall health and increased longevity.

A message to those, willing to contribute by means of reviewing the White paper.

This version of MEDIBIT STO PROJECT white paper has been released as a draft, with the purpose of introducing the idea and to receive valuable feedback from the community. If you would like to contribute by leaving your comment or review, please email: info@medibitcoin or join our social network by visiting medibitcoin.co.uk.

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[2] According to NHS "A Health Care Provider is an Organisation acting as a direct provider of health care SERVICES. A Health Care Provider is a legal entity, or a sub-set of a legal entity, which may provide health care under NHS SERVICE AGREEMENTS; it may operate on one or more sites within and outside hospitals. This definition covers Local Authorities with social care responsibilities working in cooperation with an NHS Health Care Provider on nationally targeted and prioritised care as delivered within Care Spells. Lead responsibility for such care may be solely led by one Health Care Provider or jointly shared by two or more Health Care Providers each of which must share equal responsibility.
The following Organisations may act as Health Care Providers: GP Practice, NHS Trust, NHS Foundation Trust, Registered non-NHS Provider (e.g. Independent Provider, Independent Sector Healthcare Provider etc), Unregistered non-NHS Provider, Care Trust, Local Authorities with social care responsibilities, Other agencies"
NHS (2018) NHS Business Definitions, Healthcare provider [available from] http://www.datadictionary.nhs.uk/data_dictionary/nhs_business_definitions/h/health_care_provider_de.asp?shownav=1

[3] "People have a key role in protecting their own health, choosing appropriate treatments and managing long-term conditions. Self-management is a term used to include all the actions taken by people to recognise, treat and manage their own health. They may do this independently or in partnership with the healthcare system." NHS England (2018) Supporting self-management/self care [online] available from: https://www.england.nhs.uk/ourwork/patient-participation/self-care/ [accessed] 30.08.18

OUR PROJECT IN FEW WORDS

"BUILDING A CRYPTO-COMPANY TODAY, THAT'LL ONE DAY BE WORTH $1 TRILLION"

PLEASE OBSERVE OUR LOGOS FOR CLEAR BRAND RECOGNITION

Medibit (MDB) Token logos

Medibit STO Project logo

WORD FROM FOUNDERS

First and foremost, this project is very close to our hearts.
Out of many reasons, being able to save millions of lives globally, by
connecting patients seeking 2nd opinion and consultative
healthcare is the most important one.

Second, this project is not just a-profit-making venture, rather
being a Socially Responsible Corporation, embracing the fact how it will
affect people, planet and profits (profit-sharing), is equally important for us.

Third, the Global Mobile Healthcare market sector we are entering into,
with blockchain technology, is yet untapped. Although there are many
applications (apps) successfully operating under the category
of 'health and fitness' and 'primary healthcare', the challenges such a data
security breaches, and fraudulent activities carried out under stolen identity
to name only few, this project wouldn't have been possible before.

Thanks to the disruptive Blockchain Technology, our project is possible
today. With the right amount of funding raised within the anticipated
timelines, this project has a huge potential of transforming itself into a multi-
billion business that will be saving millions of lives across the globe.

We would like to truly extend our gratitude from the bottom of our hearts,
to all of our project investors and wider community, who believed in us and
the project. Without their support, this project wouldn't have been possible.
Please join us on this journey on "disrupting the mobile healthcare sector"
for evolving the way people will manage their health.

THE FOUNDERS

KASHIF RIZVI

CEO. PROJECT MANAGER. BUSINESS DEVELOPMENT

🐦 cashriz
✈ t.me/singingcryptos
in kashifrizvi

Glad you are reading our here. I am the founder of this project. Working on this exciting & revolutionary project, I started at the conception, development and design stage. At present I am responsible for business networking, creating awareness and why is it really needed, sales and team building, and taking care of legal issues.

My educational background in this disruptive blockchain technology plus self-taught programming, leverages my effort in this domain. But what would interest investors more is how we are going to fund and complete the project.

I am a people's person hence hunting and managing the talent is what I do best. Similar to any project, we have learned the hard way that contractors can't be beneficial to the project as much as home-grown team, who is literally dedicated fully to the project. This calls for self-management, self-motivation along with managing and motivating the team. Due to the infancy of this market, there are days, when none of us know what we are really doing, but all we know that we have to keep moving. For example, at present we are developing in house, fully scalable KYC system that should be both secure and very efficient. Available services such as ICOBoxSoftware, failed to deliver what it sold, hence we are facing time delays as we aren't left with much choice but to build the system form scratch.

I've mastered patience and commitment whilst working as a Forex trader for 10 years. I am actively engaged in networking & offline community building ventures. Although, market volatility still remains a challenge, I overcome the challenge by educating people how to use volatile market in their benefits. My team & I take pride in successfully running this project over a period of 1 year by now.

AFSHEEN JAFRY

COO. PROJECT OWNER. DEVELOPER

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I am the COO, Project Owner and Developer of this project, also responsible for managing & promoting Security Token Offering (STO) across the media. This also includes exploring collaborative partnership opportunities, representing company on social media channels, along with carrying out research & development activities.

I add value to the project by bringing in my MSc degree in blockchain technology, combined with 7 years experience in IT-Business consultancy provided to 100+ projects. My team and I are focused on excellence. This means being fully aware of the fact that we are working on a truly revolutionary project, hence scalability is at the core of the project. Needless to say, developing infrastructure, technological backbone and playing our part in developing the ecosystem, is what we consider as building the foundations.

Let's be very honest here. We are operating in an infant, unregulated and highly volatile market. In addition, projects can go inherently opposite to as planned yet, project timing is crucial to success.

Therefore, I am laser-focused towards, thoroughly knowing our product; community, team and infrastructure building; security management; and research, research and research (really couldn't stress more on these). Above all, not to forget that this project aims to make profits, hence as I'd mentioned earlier scalability of the business is always on top of our list.

Next, self and team motivation is pivotal. There are days when bearish market literally floods away all of our efforts of selling tokens to fund the project. The way we survive such situation is keep moving, quickly shifting focus on drawing lessons, preparing aggressively for the bullish market.

1.INTRODUCTION

1.1. MEDIBIT STO Project

The project is highly ambitious as it challenges the current global healthcare system by giving an opportunity to people to manage their own health. Through generating and using the digital currency also known as cryptographic currency/ cryptocurrency/cryptos/alt-coins as the mainstream currency/mode of exchange of value on our platform, we are also joining the forces to challenge the current financial systems.

1.2. Problem

Let's say someone has a health issue and the primary care practitioner-GP or family doctor isn't quite sure what it is, seeking a 2nd expert's opinion is usually a good idea: over 20% of people get a different diagnosis after they are referred to consultative healthcare practitioner. However getting the right answer comes with a huge price tag that could be $4000+, and may not be possible on many insurance plans. This doesn't mean that every diagnosis is 20 percent likely to be wrong. A research study[4] identified that serious conditions are referred to consultative healthcare providers by their primary healthcare providers, because those providers recognised such conditions as complicated or unusual and needed another pair of eyes. Many of the reasons for referral were descriptions of symptoms rather than a formal diagnosis; for example, a patient with acute myelogenous leukemia was referred with "body aches."

How easily 2nd expert medical opinion is accessible

Unfortunately, 2nd expert opinions aren't an option for everyone. A patient that has no access to top-notch medical detectives, and expertise, has not any choice but to suffer. Secondly, insurance plans usually save money by limiting their networks, so the consultant a patient needs may not be covered. Again, paying from their own pocket is not an option for most of the people, since seeking 2nd opinion usually cost an average of $1200 for patients whose primary or original diagnosis was correct, and over $4000 for patients who ended up with a different diagnosis (probably because they needed more testing). These costs don't include traveling expenses.

What are the consequences of not able to seek 2nd expert's opinion

Millions of people across the globe get affected due to misdiagnosed or undiagnosed medical conditions. There is an excoriating problem i.e. these people have little or no access to seeking 2nd opinion from a healthcare practitioners for few prime reasons: a. the healthcare system they are part

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[4] Van et al. (2017) Extent of diagnostic agreement among medical referrals, Journal of Evaluation in Clinical Practices [online] available from: https://onlinelibrary.wiley.com/doi/full/10.1111/jep.12747

of doesn't give them easy access to medical records, hence discouraging to seek 2nd opinion; b. private insurance-based healthcare is highly priced that doesn't support many options for patients; and c. highly qualified healthcare practitioners charge high fee (privately or as part of a system) that is not affordable by a wider population.

With misdiagnosis or undiagnosed symptoms, patient could end up getting harmful treatments, or miss out on the treatments that may be urgently required. Getting the right diagnosis later on means more costly treatment, because late diagnosis resulted in complication.

Conclusively speaking, lack of accessibility to 2nd expert opinion results in millions of deaths every year. A more disturbing fact is that the data of millions of people suffering and dying due to lack of ill-practices, poorly designed policies and procedures and negligence of healthcare systems come from developed countries.

This leaves us with 2 very trivial questions: how many people are actually suffering globally? And most importantly, only if we could voice masses here, is there a lack of trust in the global healthcare systems?

1.3. Medibit's Solution: a decentralised trust & quality platform that connects patients & consultants in niche use case

To address the identified problem, a market place is needed, operating on a decentralised app (DApp). The DApp connects 2 group of people in this niche use case: a. patients seeking 2nd opinion on their initial medical diagnostics *with* b. consultative healthcare practitioners such as consultants/specialists, globally. The technology upon which this DApp will be build, is blockchain. Our own ERC20 token called MEDIBIT (MDB) will be used as mainstream currency in exchange of value i.e. selling/buying services.

Putting trust back into healthcare systems while accessing consultant's 2nd expert opinion is difficult because:

- Consultants need to a part of a centrally governed healthcare system, like CareGroup Healthcare System, Boston, US; National Healthcare System, UK; Fortis Healthcare Limited, India etc. where they must pay a sales commission.
- Modern healthcare systems are lacking their founding element i.e. removing financial questions from the consulting room and transferring them to a central government body. Today, it's more about profits than patients.
- Consultants inclined towards private work, making their accessibility more costly and difficult
- Getting the right answer to one's symptoms can easily cost over $4000, and may not be possible on many insurance plans.

- The best medical care goes to people with good insurance, plenty of money, lots of luck—or a combination of the three.

HOW IT WORKS

Medibit platform will be build to symbolise 'trust and reputation' at its core. The platform will be global, transparent, self-executing, not controlled by any central authority, operating flawlessly together with digital currency called Medibit.

The prime activity of this platform will be connecting patients seeking 2nd expert opinion on their initial medical diagnostics *with* consultative healthcare. The supporting activities in this platform will be of bank, exchange and research and development.

Every time a transaction (appointment booked, payment made and consultation takes place) is made, the blockchain will save the time of the transaction, both the receiving and sending addresses, conditions agreed, delivery time, and all other information that is typically needed to ensure the trust in our platform.

All the sensitive information will be hashed and only available to authorised users in a presentable user interface. Based on that information, consultants and patients will be able to set up an appointment, request diagnosis reports to be uploaded, leave reviews/feedback on the platform and rate the service. Default trust rating stemming from reviews left by the patient will be created for the consultants using the Medibit ecosystem. A 'Trust' rating will be assigned to each consultant offering his/her services. Every time a transaction is made, and review is written, the smart contract will automatically change the trust level for the consultant involved.

1.3.1. Quality Control Measures

The Consultant's Trust rating

Once the consultant starts accepting mobile Ethereum based currency payments using Medibit, a default trust rating will be created. Smart contract will automatically change the trust rating according to the behaviour of the consultant. For example:

a. Does the consultant react to requests from patients?
b. Does the consultant react quickly to requests from patients?
c. Do patients rate the consultants for offering service as promised: on time, as advertised and in good quality?
d. Does the consultant have good reviews from patients?

The second layer of 'Trust' rating will be generated by Quality Control Team activity. This team would be composed of consultants who would be asked to rate other consultants without disclosing their identities. For example:

a.   Was the consultant's opinion viable given patient's symptoms/complaints?
b.   Did consultant consider additional factors while forming opinion?
c.   Did the consultant communicate the impact of his opinion on patient's life?
d.   Were any doubts raised by patient, cleared by the consultant?

Different weights will be assigned to different actions.

The Trust rating will be visible to everyone in the most common and typical places, such as the footer of the website or DApp. The only way the consultant's trust rating can be increased is by offering consultancy as advertised.

Patient's 'Trust' rating

The main reason to create a 'Trust' rating on our platform is to decrease the likelihood of incompetent activities and offer incentivised features for patients. Once a patient books an appointment with a consultant and makes payment using Medibit for the first time, the default trust rating for that patient will be automatically created and linked to the wallet address of that patient. The patient's 'Trust' rating will be updated automatically by the smart contract based on his or her behaviour.

Different activities will be weighed, such as:

- What is the patient's problem (symptoms, primary healthcare practitioner's diagnosis)?
- How many times patient booked an appointment on our platform?
- Did those appointments execute into successful online consultation sessions?
- Is the patient satisfied with the consultation outcomes?
- What's the history of patient with the platform: behaviour, frequency, etc.

The trust rate of the patients will be available to see on the blockchain and visible in a user-friendly interface to consultants once the payment is made. The patient's trust rating will be visible on the blockchain or in Medibit DApp. In a totally decentralised environment, it is important that consultants have all the required information about the patients. The most important thing for a consultants is to avoid someone who does hazardous things on purpose. If that happens, the consultant's credibility will be compromised hence lowering patient's trust rating in our platform,

significantly. Based on that information, other consultants will be able to decide whether they want to serve a patient's request with a low trust rating.

Claims, reviews and conflict management

Every consultation and transaction will be recorded and saved on the blockchain together with the time stamps, both receiving and sending addresses, conditions, appointment date and time, the domain of the consultation (oncologist, ENT, Psychiatric, cardiologist etc.) and all other information that is typically needed to ensure trust.

The following information will be available to both parties:

The consultant will have all the information about every consultation with the above-mentioned details in his profile in the Medibit platform.
The patient will be able to see all his consultation details together with the above-mentioned details only in his profile within the Medibit platform.

Based on that information, parties will have an opportunity to file/resolve claims, review, and rate each other in a transparent way.

Smart contract will automatically decrease or increase the trust rating. That kind of management of conflict resolution through smart contracts will help each party to deal with the situation faster, easier and cheaper (no chargeback fees for the consultant).

Claims

Once the patient books appointment and made payment, all the required information is saved to the blockchain. In order to see that information, the patient must download the Medibit DApp. Once he logs in, he sees the payment(s) he made with a particular wallet address anywhere using Medibit as a payment gateway. The patient selects the particular consultation session he is not happy about, and initiates a claim by providing the details of the claim, e.g., the consultant wasn't mentally present during the session. The consultant's trust rating is immediately decreased, so the consultant is incentivised to solve the problem as quickly as possible. The consultant receives the notification about the claim, looks at the details and contacts the patient off-chain. Patient and consultant agree on the solution and one of the parties initiates a resolution by pressing the "Claim resolved" button in the DApp. Details of how the situation was resolved (consultation was given again free of charge, more medical reports required, etc.) must be provided as well. The details are saved to the blockchain. The other party gets the notification, reads the details and agrees by pressing "Claim resolved". Once the claim is resolved, trust rating is increased for both parties instantly.

Reviews

Patients and consultants will be able to write reviews about each other. Written reviews will have more weight on each other's trust rating than just "silent" transactions without a review. For example, a patient's review about a good service will increase the consultant's trust rating more than just a simple "silent" transaction without writing a review. Reviews about the consultant will be visible in the DApp for patients. Consultants will see the reviews patients have written about them in their system. All reviews, good and bad, will be automatically reflected in the trust rating of the patient and the consultant .

Conflict management

Conflict can be managed even before it surfaces by signing contracts. A consultant can propose a 15 day reconciliation policy - no questions asked. This consultant will be in a better position to sell than the one who does not offer a reconciliation policy. These rules will be published by the consultant. Smart contract will ensure consultant and patients are respecting their commitments to each other and the rating system will reflect that.

Patients will be signing a contract declaring these:
- All the information provided had been accessed by legal means applicable in their respective country.
- All the information provided are provider/patient's own data and he/she owns the right to distribute it for his healthcare needs.
- The information provided will be shard by Medibit for research and development purposes only, that included information shared with third parties.

1.4. The Technology

The reason for choosing blockchain as the backbone of our platform is its unmatched capabilities. Xia et al. (2017) cite "the migration of medical records to cloud-based platforms has facilitated the sharing of medical data between health care and research institutions, enabling faster and more convenient exchange in a manner previously not possible [1]. The advantages of collaboration range from gaining new insights into already existing treatments, analysing new ones, and better management of population health.[5]"

Within a healthcare system / medical organisation, the following data needs to be actively managed: a. patient health information (PHI); b. electronic health records; c. data collected from IoT (Internet of Things) devices or monitoring systems; and d. medical insurance claims. This means that security of data and information sharing methods, allowing both healthcare practitioners

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[5] Xia, Q (2017) BBDS: Blockchain-Based Data Sharing for Electronic medical Records in Cloud Environments, Information- Open Access Journal of Information Science

and providers to verify the data integrity, are pivotal for ensuring required healthcare services. This is the point where blockchain technology is exceptionally needed. One of its prime advantages is the data integrity as once information is recorded and encrypted in the blockchain, it becomes impossible to modify or remove it.

Although, this disruptive technology is relatively new and has seen advanced developments of its most significant application within the cryptocurrencies space, however healthcare leaders at KPMG believe in "blockchain activity in healthcare ramping up in the next 12 to 24 months." [6]

Research studies further indicate an urgency to develop a *blockchain based access control system* that adequately controls the access to medical data stored and processed on cloud systems along with securely offering efficient data sharing. Blockchain technology offers secure cryptographic techniques to identify and authenticate users and systems and thereby bring about access control in a scalable, distributed, and secure manner[7] . The technology in discussion in our Platform will be used for security in research & development activities including clinical trials, provider directory management, and patient records . The system security issues will be addressed through using cryptographic keys-based access control system.

1.5. MEDIBIT Platform

Medibit's platform will be accessed by anyone from anywhere in the world, transparent, self-executing, not controlled by any central authority (i.e. independent of any healthcare system), and working flawlessly with fast and secure payment solution - MEDIBIT - the ERC20 token.

To further validate business case, following components (which will be additional income streams too) collectively build our platform: a. MEDIBIT-DApp, b. MEDIBIT-Exchange (Internal Exchange) and Bank, and c. MEDIBIT-Intelligence (Research & Development Unit).

The development of our platform is divided into 3 distinct stages:

a. Entering into the market: Challenging and evolving how people manage their healthcare, minus the dependency on healthcare systems.
b. Development: Growth of services and usability by means of evolving and managing healthcare via smart contracts.
c. Growth: Offering an evolved way of how people manage their health using a decentralised, mobile platform connecting them to consultative healthcare practitioners anywhere in the world.

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[6] Leventhal, R (2018) Analyzing Blockchain's Evolution in Healthcare: Two Experts Dive into the Details [online] available from: https://www.healthcare-informatics.com/article/innovation/analyzing-blockchain-s-evolution-healthcare-two-experts-dive-details [accessed 30.08.18]

[7] Zyskind, G.; Nathan, O.; Pentland, A.S. Decentralizing privacy: Using blockchain to protect personal data. In Proceedings of the 2015 IEEE Security and Privacy Workshops (SPW 2015), San Jose, CA, USA, 21–22 May 2015; pp. 180–184.
Yue, X.; Wang, H.; Jin, D.; Li, M.; Jiang, W. Healthcare Data Gateways: Found Healthcare Intelligence on Blockchain with Novel Privacy Risk Control. *J. Med. Syst.* **2016**, *40*, 218. [PubMed]
Zyskind, G.; Nathan, O.; Pentland, A. Enigma: Decentralized Computation Platform with Guaranteed Privacy. *arXiv* **2015**.
Hardjono, T.; Pentland, A.S. Verifiable Anonymous Identities and Access Control in Permissioned Blockchains. Available online: www.w3.org/2016/04/blockchain-workshop/interest/hardjono-pentland. html (accessed on 16 April 2018).

1.3. The Medibit Token

Medibit will be used as mainstream currency to facilitate transactions across the system. <u>There are 100,000,000 MDB tokens created. The symbol is MDB.</u> At the time of writing, 1MDB is sold for £0.25 in private sales phase.

2.BUSINESS CASE

2.1. Why invest?

Blockchain is a disruptive technology has the potential to modify how businesses approach big data today. The 2 widely acclaimed benefits are enhanced security and data quality, and what we are experiencing today. An impressive amount of USD 1.3 billion[8] invested globally into blockchain projects. But why would investors, invest in blockchain projects today?

Matt Markiewicz, managing director of Innovation Shares, New York explains this in the most simplest way: "Twenty years ago you couldn't really define the internet either. Now you think you can because you can't live your daily life without it," says Matt Markiewicz, managing director of Innovation Shares in New York. "That's going to be the same with blockchain technology. But trying to boil it down in layman's terms and explain what sectors will benefit is really tough. We are all still figuring this out."

2.2. The Project- Medibit

Referring back to the problem identified in section 1.2, we have created a business model with a capability to overcome the mHealthcare markets' major constraints: security issues, complexity in mobile system, and bolstering patient engagement.

Vision

Build a community, empowered enough to self-manage its health by means of embracing disruptive technology-blockchain. Being one of very few players in this market, we see ourselves as the best in the business and apex innovative and disruptive technologies to their full potential. Being committed to our community, transparent and ethical in all business activities, we believe in synergising the ecosystem, through establishing collaborative partnerships..

Mission Statement

The Medibit Platform's core mission is to empower people to self-manage their health, globally, reduce overall treatment costs and create a healthcare community. MDB is created to be used as a prime currency inline with our mission and vision. Medibit Platform focuses on developing a transparent, decentralised platform that deliver the services. MDBs will be used as a prime mode of

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[8] TechCrunch (2018) With at least $1.3 billion invested globally in 2018, VC funding for blockchain blows past 2017 totals
[online] available from: https://techcrunch.com/2018/05/20/with-at-least-1-3-billion-invested-globally-in-2018-vc-funding-for-blockchain-blows-past-2017-totals/ [accessed] 01.09.18

payment in exchange of hiring the services. The goal is not to compete with other cryptocurrencies, but rather to provide a solution and support for a real-world problem within the global Medibit market by means of a blockchain-based system. The Network is interested in evaluating the actual substance and value that can be created with our token, representing the health of all individuals. Medibit will be both a Fin Tech and logistic platform of the global Medibit market. The Network's exact contribution in ERC20 coins (MDBs) used for healthcare projects will be provided in the later revisions of white paper.

Objectives

We aim to achieve long-term success, driven by our customers' feedback and transferring the power onto them. We believe that it is the people who have the power to make any business success and not other wise. People trust people, thus there is nothing more valuable to the industry players than constant, trustworthy feedback received from the patients. However, a community needs to exist for this to be achieved and this is where project steps in. Our project emphasises the industry's challenges and reveals the solutions for increasing the healthcare practice's efficiency. Implementing a blockchain based revolutionary solution can incentivise the industry in solving the majority of the existing and future constraints. Below are the 4 phases of implementation each with its own milestones, goals, and focus.

The MEDIBIT Platform

This platform develops a community of patients and healthcare practitioners. We are a UK based enterprise that offers a blockchain based system enabling patients and healthcare practitioners to connect via a decentralised (DApp). The platform allows patients to seek 2nd opinion along with sharing diagnostic reports. At the core of technology, we are offering an
innovative disruptive idea in the information and communication technologies (ICT) space. Our system enables the efficient sharing and exchange of information with stakeholders (patient, healthcare practitioners, investors, and wider community) while ensuring data integrity and protecting patient privacy. In addition, other service offerings also form the components of this network. These are: Medibit Exchange, Medibit Bank, Medibit Intelligence (market intelligence data collection unit).

This system represents an evolutionary solution to the mobile healthcare industry as it will reduce cost of operations, and interoperability challenges currently plaguing the implementation of eHealth initiatives across the globe.

Project Outcomes & Benefits

This project would evolve the way people will manage their health in a much wider perspective. As an example, a patient would have options to seek consultants' opinion, say if he isn't satisfied by his primary care provider. Further on, considering the trickle-down-effect, it would also reduce the cost of healthcare on the systems, avoid unplanned hospital visits, gives people greater and in some cases better control of their health, increased personal responsibility towards their healthcare, and better manage long-term conditions. The ultimate benefits wouldn't only be enjoyed by healthcare systems, but also in particular by patients.

Contributors' reward

Medibit project contributors will be rewarded by price appreciation of the MDB Tokens, as it will be used as mainstream currency in its own digital marketplace called Medibit-DApp. The marketplace is under development at the time of writing this paper. Through this reward system, the Network will further see a rise in the price of MDB Tokens determined by 'supply and demand' principle i.e. the demand of the service would appreciate the price of the token.

2.3 Risks & challenges associated with the project & how we aim to address those

The successful adoption and operation of any innovative technology is dependent on the appropriate management of the risks associated with that technology. This is especially true when that technology is more than an application and is part of the organisation's core infrastructure as planned by this project. Blockchain has the potential to be the backbone of many core platforms in the near future [9].

Political and regulatory risks: Considering the challenges, political and regulatory pressure couldn't be overlooked. According to Harvard Business Review: "To protect the blockchain vision from political pressure and regulatory interference, blockchain networks rely on a decentralised infrastructure that can't be controlled by any one person or group."[10]

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[9] Deloitte (2018) Distributed ledger technologies [online] available from:
https://www2.deloitte.com/us/en/pages/risk/articles/blockchain-security-risks.html [accessed 06.09.18

[10] HBR (2017) Who Controls the Blockchain? [available online] https://hbr.org/2017/04/who-controls-the-blockchain [accessed] 30.08.18

However, we believe that integration of blockchain in healthcare is an extraordinary concept; one that requires the creation of a community in which transparency and shared responsibility can take place. At the time of writing, within healthcare sector, we come under UK regulation of i.e. Care Quality Commission (CQC) registration. On the other hand, within the financial sector, things are still unclear. We have been advised to follow Financial Conduct Authority (FCA) announcements regarding digital currency sold as securities, therefore we are keeping up with the news for further directions. Therefore we are aware of news updates concerning digital currency regulations, and would be updating any other regulation we may come under.

Innovative technology risks: Blockchain technology is relatively new technology therefore decentralisation can make implementation process longer than expected. It is noted that when projects adapting a disruptive/innovative technology and regulators don't understand each other, innovation suffers. It should be noted that blockchain technologies expose institutions to risks that are similar to those associated with current business processes but introduce nuances for which entities need to account.

Value-transfer risks: Third, blockchain enables peer-to-peer transfer of value (i.e. consultative 2nd opinion and medical diagnostic records, in cace of this particular project) without the need for a central intermediary. As a result, our business model will expose the interacting parties to new risks that were previously managed by central intermediaries such as healthcare system and providers.

Smart contracts risk: Smart contracts[11] can potentially encode complex business, financial, and legal arrangements on the blockchain, and could result in the risk associated with the one-to-one mapping of these arrangements from the physical to the digital framework.

Team-building risk: We realise and acknowledge that crypto-startups are distributed, anarchic, complex and experience greater uncertainty than most startups given the vagaries of the crypto ecosystem. The risk associated here is effective communication, strong team-building and creating a team that can last beyond the ICO. By the end of Pre-STO sales, our team will comprise of project-manager, ICO-project owners on advisory board, healthcare consultants and developers. Post STO-crowd sale, research & development executives engaged in identifying potential problems arising and designing solutions to mitigate the damage.

Operating as a small, dedicated team, we are committed in understand the technology and its associated risks that are likely to modify and evolve as this technology continues to mature. It's therefore imperative for us to continue to monitor the development of this technology and its application to various use cases.

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[11] What is smart contracts: The business logic is encoded using smart contracts. Smart contracts are self-executing code on the blockchain framework that allow for straight-through processing, which means that no manual intervention is required to execute transactions. They rely on data from outside entities referred to as "oracles," and can act on data associated with any public address or with another smart contract on the blockchain.

Regulatory challenges: As European Unions's General Data Protection Regulation (GDPR) unifies Europe's regulatory landscape regarding the use and storage of personal data, the legislation has become a sticking point for firms which use permission-less blockchains since the storage of data is not limited to any one particular geographical location.

Operating risk: Operating risk refers to the change in a company's earnings due to internal factors. While sales have a direct impact on a company's income, these factors have an indirect, although just as strong an effect. Operating risks are caused by anything that can lead to an internal breakdown of the company's operations. Usually lack of old infrastructures and assets result in higher operation cost that lowers down business profitability. The beauty of our business is that operating in a fairly infant market, our team of blockchain developers are highly-skilled within their domains. Other risks such as equipment failure will be mitigated through observing industry best practices. Business insurance and keeping up the regulatory requirements will also help us mitigating these operational risks. Lastly, from very early-on in the project/business lifecycle, the founders have been extremely focused on building business relationships and networking to ensure business expansion and increasing profitability in due course of time.

Financial risks: Financial risk refers to the risk of a fall in profits due to high financing costs. The revenue a company earns trickles down as profit after a deduction of many expenses from it. Usually one of these expenses is the cost of debt, i.e. interest a company has to pay on the money it has borrowed. Given our business model, the business will be funded through token sales, eliminating any need to borrow money from lenders and worry about increasing interest rates on the debt, affecting profit percentage. A detailed account of token-economics aka tokenomics is provided in chapter 5.

2.4 Time & Cost

The project is structured for 3 years. Expressing project cost and validation, cost estimates are prepared to different ends throughout the project lifecycle. Up front, the goal is to provide input for contribution/investment decisions for the community. This will help in determining the size of the required investment to further develop and run the project. It is also during the early phases that alternative plans are considered that need to be priced. The cost estimate is a deliverable that serves the decision-making process at each gate of the project lifecycle.

3. BUSINESS MODEL

3.1. What is a business model, & why is it needed?

Put simply, our business model describes how we business will make money. Business initiate with lofty ideas and a wide range of resources and capabilities at their disposal. However, unless these resources can't be leveraged in a way to produce profits, success is daunting. Provided below is the strategy that will be deployed to leverage available resources in order to make profits.

3.2. Why investors must understand our business model?

Business model is a blueprint for future revenue generation. An investor needs to know whether our business will continue making money in future and how clear our future vision is. The investor also need to know the clarity on future business objectives and the strategy revenue generation. Business model is not a business plan as it only lays down the broad contours of how a business will work.

3.3. What is our product?

Our product is Medibit Dapp- a prime source of revenue generation. Medibit Dapp will offer a service of connecting patients and consultative healthcare practitioners, within niche use case. Other services working in support of prime service would be a. Medibit-DApp & exchange (our internal bank and exchange to ensure buying & selling of tokens); Medibit-Intelligence (database collecting research data in the form of feedback & reviews provided by the doctors and patients, both for future collaborations & partnerships).

3.4. What are the major sources of revenue?

A commission on each consultancy sessions carried out through the Dapp will be be earned by the business. Other revenue sources are: selling research data and charging commission on transactions made through Medibit-Bank & Exchange. A detailed account of products and revenue sources is provided in chapter 10.

3.5. What are the distribution channels?

Security tokens will be sold online via company's website & independent crowdfunding platforms. Utility tokens will be sold via external exchanges (e.g. Binance) and internal exchange i.e. Medibit-Bank & Exchange

3.6. What are the key risks?

The risks involved are categorised as business, financial and security. A detailed account of these risks are discussed in section 2.3

3.7. Who are the target customers?

- Early contributors to project i.e. investors
- Buyers/contributors who would purchase tokens post first 3 phases of token sales. For a detailed account of Token Sales phases, see chapter 7.
- Consultants or specialists doctors
- Patients seeking 2nd opinion on their diagnosis. They would need to buy tokens to use the service.
- Buyers of research data such as pharmaceutical companies, healthcare institutions etc.

3.8. What will the major costs be?

Businesses incur a variety of costs. Some of them are fixed, irrespective of the number of units sold, while others vary with it. Some are incurred for once upfront, whereas others recur periodically. An analysis of cost is important in a business model because the profitability of a business can only be judged upon the estimation of costs. If a business is not profitable after subtracting expected costs from expected revenues, it is not a viable business and must be scrapped.

3.9. Who are the competitors?

Operating in an infant blockchain and crypto market, we have an early-adoption advantage. Our nature of business calls for synergising 2 industries, one fairly young (the blockchain and crypto market) and other quite untapped (the mobile healthcare sector). At the time of writing, there are 18 Dapps within the global healthcare sector, none of which is offering what we are. If we tend to broaden our horizon, 70% apps within the mobile healthcare sectors are health and fitness based. To best of our knowledge, at the time writing, there are no apps offering service like ours.

In terms of competition within the blockchain industry, since our prime service is truly exceptional and revolutionary, we believe that we would be co-existing in the crypto space playing our role in developing the ecosystem.

At first it may sound overly-ambitious to read when we say that we don't have any competitor as in yet, because we don't. We will consider competition when another company would surface offering exactly the same service as we are.

3.1. COMPOUND ANNUAL GROWTH RATE OF GLOBAL DIGITAL MARKET

3.10. How flexible is the model?

At present, Ethereum platform where the Dapp would be published and operate do have scalability issues, which would affect our platform too. However given recent developments of launching Constantinople fork, we are quite confident not to be affected by the scalability issue by the time we would be running live. On the business side of the project we would be actively looking for new markets and collaborations/partnership opportunities for expanding the business. Business scalability is very important for our profitability and sustainability.

4. MARKET ANALYSIS

4.1. The problem: Misdiagnosis or undiagnosed medical conditions

Many patients mistakenly assume that misdiagnosis or undiagnosed symptoms of medical condition are normal occurrences within a healthcare service providing environment. Unfortunately patients don't realise that healthcare providers are ethically and legally responsible for worsening medical conditions or medical costs resulting from delayed or incorrect diagnosis and subsequent treatments. This should not be the case. Patients are required to be aware that delays in diagnosis and failure to proper diagnosis are physically, emotionally, and financially damaging.

In 2009, the Healthcare Commission found that missed or wrong diagnoses were a major cause of complaints to the NHS. Of more than 9,000 complaints analysed, almost one in 10 related to a delay in diagnosis or the wrong diagnosis being made. Separate research also suggested that one in 10 patients in hospital was harmed because of the care they received[12].

Between April 2008 and March 2009 there were 39,500 reports of incidents involving clinical assessment. Those included missed or wrong diagnosis but also related to scans that could have been misinterpreted or where the wrong body part was scanned or tests where patients' samples could have been mixed up.

The most common reasons for misdiagnoses are lack of training, misinterpreted test results, poor communication and diseases that had similar symptoms. According to NHS, common types of misdiagnoses are failure to diagnose, late diagnosis, and incorrect diagnosis. For the FY 2014-2015, misdiagnosis of symptoms cost NHS hospitals a belting £197.2million. [13]

The problem is not just reported in the UK. In fact, 12 million Americans are misdiagnosed every year[14], whereas 160,000 patients each year die or suffer permanent damage as a result of misdiagnosis.[15]

Unfortunately when we talk about wider global population, no authenticated research data is available on the public domain.

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[12] The Telegraph (2009) One in six NHS patients 'misdiagnosed' [online] access http://www.telegraph.co.uk/news/health/news/6216559/One-in-six-NHS-patients-misdiagnosed.html

[13] Mintel (2018) Health and protection market research reports- consumer behaviour analysis- market trends, Mintel

[14] Forbes Health (2014) 12 Million Americans Misdiagnosed Every Year, New Study Shows [access online] https://www.forbes.com/sites/melaniehaiken/2014/04/22/12-million-americans-misdiagnosed-every-year-study-suggests/#56ff5ddd23bc

[15] 15 Forbes Health (2014) 12 Million Americans Misdiagnosed Every Year, New Study Shows [access online] https://www.forbes.com/sites/melaniehaiken/2014/04/22/12-million-americans-misdiagnosed-every-year-study-suggests/#56ff5ddd23bc

4.2. What drives this market?

Changing consumer attitudes are driving and reshaping the market readiness to address the problem

In context of above situation, our research strongly indicates that the market where we aim to operate i.e. m-healthcare sector is ready and mature enough to adapt to the provided solution.

Indicator 1: The adoption of wellness and preventive medical is a strong trend in consumer behaviour. Although public health campaigns and mass media have increased the messages on healthy habits and wellness to modify consumer behaviour, it is actually the adoption of electronic health (eHealth) and mobile health (mHealth) in the form of electronic health records (EHRs) and personal health records (PHRs), respectively that is heavily influencing the most recent innovation in self-manage healthcare initiatives.

Indicator 2: As healthcare costs are expected to increase, governments and healthcare systems are setting up newer and more efficient delivery processes using digital platforms. This trend is happening all over the world, in both developed and emerging markets. The health of a consumer is being recorded digitally starting at the healthcare practitioner's office via EHRs and ending at home with the use of medical devices, wearables or apps in smartphones that track and monitor the individual's health markers as PHRs.

Indicator 3: All this data is moving to the cloud and becoming a wealth of knowledge that will help decision makers understand how healthcare works at many different levels: individual, genetics, delivery of care, monitoring, etc.

Conclusively, it is observed that over a period of 2017-2022, consumers will look to achieve optimal states of wellbeing and prevent the development of future illness by taking more holistic approaches to the idea of self-managed healthcare.

4.3. Is the market ready for the project?

According to Statitsa, the value of the global mHealthcare market in 2017 was valued at around 25.39 billion USD. The number of mHealth apps downloaded worldwide reached a high in 2016, with an estimated 3.2 billion downloads, almost double from the number of downloads in 2013.[16] Further more, the market is poised to grow at a CAGR of around 32.3% over the next decade to reach approximately $189 billion by 2025.[17]

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16 Statista (2018) mHealth (mobile health) industry market size projection from 2012 to 2020 (in billion U.S. dollars)*
 [online] available from https://www.statista.com/statistics/295771/mhealth-global-market-size/ [accessed] 30.08.18

17 ResearchandMarkets (2018) Global Mobile Health Market Analysis & Trends - Industry Forecast to 2025 [online] available from:
https://www.researchandmarkets.com/research/kxvn3l/global_mobile [accessed] 30.08.18

A recent global study[18] conducted for PwC Global Healthcare by the Economist Intelligence Unit (EIU)[19] reports:

- Approximately 50% the global consumers and 60% of the Indian consumers expect improved mHealthcare within next 3 years in terms of convenience, cost and quality.
- 59% of all emerging markets use at least one mHealthcare application or service, as compared to 35% in the developed world. Almost half of the users expected mHealthcare to modify the way they manage chronic conditions (48%), medication (48%) and overall health (49%). 59% consumers expected mHealthcare to change the way information is sought on health issues whereas 48% expect it to change the way they communicate with their healthcare practitioners.
- Among consumers already using mHealthcare services, 59% have replaced some of their visits to healthcare practitioners.
- The top three reasons consumers want to use mHealthcare is convenient access (46%), reduced out-of-pocket healthcare costs (43%) and to take greater control over their health (32%).

Moreover, healthcare practitioners and providers are more attentive than consumers in their outlook for mHealthcare. Specifically speaking:

- 64% of practitioners and providers said that mHealth offers exciting possibilities but there are too few proven business models.
- 27% of practitioners encourage patients to use mHealth applications to become more active in managing their health, and 13% of practitioners actually discourage it.
- Providers appear to be far more supportive of mHealth than practitioners. 40% of providers compared to 25% of practitioners encourage patients to let practitioners monitor their health and activities using mHealth services and devices.
- Providers and practitioners both cited multiple barriers to the adoption of mHealth, notably the complexity and scope of change associated with mHealthcare practices.
- 45% percent of practitioners and providers said that the application of inappropriate regulations originally developed for earlier technologies is slowing the adoption of mHealth.
- 27% practitioners and 26% providers cited an inherently conservative culture as a leading barrier to the adoption of mHealth.

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[18] Brazil, China, Denmark, Germany, India, South Africa, Spain, Turkey, the UK and the US.

FIG. 4.1 BBDS SYSTEM ARCHITECTURE (ADAPTED FROM

[19] PwC India (2018) Consumers Are Ready to Adopt Mobile Health Faster than the Health Industry is Prepared to Adapt, Finds PwC Study on Global mHealth Adoption [online] https://www.pwc.in/press-releases/global-mhealth-adoption.html [accessed] 30.08.18

Conclusively, there's a clear indication of a 'need' to seek 2nd opinion on primary or initial diagnostics. A clear mistrust of patients on their primary healthcare practitioners and providers is also evident.

Secondly, the adoption of mHealthcare in emerging markets like India as compared to developed markets is a paradox. In developed markets, mHealthcare is perceived as disrupting the status quo, whereas in the emerging countries it is seen as creating a new market, full of opportunities and growth potential. In younger, developing economies, healthcare is less restricted by healthcare infrastructure and ingrained interests. Consumers are more likely to use mobile devices and mHealthcare applications, and more providers are willing to cover the cost of mHealthcare services. According to PwC, innovators seeking opportunities in mHealthcare, including telecommunications and technology companies, must work to overcome the barriers slowing widespread adoption of mHealthcare. They can help to alleviate healthcare's resistance to change by focusing less on the technology and more on effective, customer-focused solutions that add value for healthcare providers and patients' quality of life.

In its analysis, PwC identifies strategic considerations for companies active in the mHealthcare space.

Due to ageing global population, an important question arises that would the older generation adapt to mobile healthcare? Contrary to popular belief, it isn't primarily the younger generation who is expecting self-managed health care through mobile healthcare market. In a 2014 survey conducted by Healthcare's Digital Future, McKinsey found that more than 70% of patients aged over 50 want to use digital healthcare services[20]. The key difference between these two age groups is the types of digital channels that they are comfortable using when it comes to healthcare. Older patients generally prefer website and email, though with the growing use of smartphone and tablets with the over 50's this could soon change, and younger generations are more open to newer channels such as social MDBa.

4.6. Global mobile/digital Healthcare market

The market is segmented into four areas: a. Tele-healthcare; b. EHR/EMR; c. Wireless health; and d. mobile Healthcare, or mobile healthcare. This is the sector our project is positioned in. mHealthcare sector encompasses the growing market of health apps and wearable devices; health analytics and finally digitised health systems[21].

The global digital health market was valued at USD 80 billion in 2015 and is expected to increase to over USD 200 billion by 2020. During this time, the mHealthcare segment of the industry is expected to generate the second largest revenue share, reaching USD 46 billion in 2020.

Mobile Healthcare is experiencing a growth trend as consumers demand more accessibility to their medical health practitioners and providers and transparency in health care becomes more important. However, some hesitation still exists among consumers in regard to the privacy of personal information and the security of data systems. Approximately 33% of females reported that they were not at all comfortable sharing self-collected digital information, while about 12% of male consumers claimed to be very comfortable. More efficient healthcare expenditures are also important to many consumers, where 43% of consumers state that the ability to reduce one's own health care costs is driving their adoption of mHealthcare applications and services[22].
UK[23].

Projected CAGR for the global digital health market in the period 2015-2020

This statistic displays a projection of the CAGR for the global digital health market from 2015 to 2020, by segment. During this period, the mHealthcare market's compound annual growth rate is expected to be around 41%. The digital health market is expected to reach over USD 200 billion by 2020 driven particularly by the mobile health market[24].

Trends

Some of the prominent trends that the market is witnessing include increasing awareness of surging focus on patient-centric healthcare delivery, cost limitation in healthcare delivery, and mobile-based medical devices.[25]

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22 Statista (2018) Global digital health market from 2015 to 2020, by major segment (in billion U.S. dollars), Statista

[24] Statista (2018) Forecast CAGR global digital health market by major segment 2015-2020, Statista

[25] 25 ResearchandMarkets (2018) Global Mobile Health Market Analysis & Trends - Industry Forecast to 2025 [online] available from: https://www.researchandmarkets.com/research/kxvn3l/global_mobile [accessed] 30.08.18
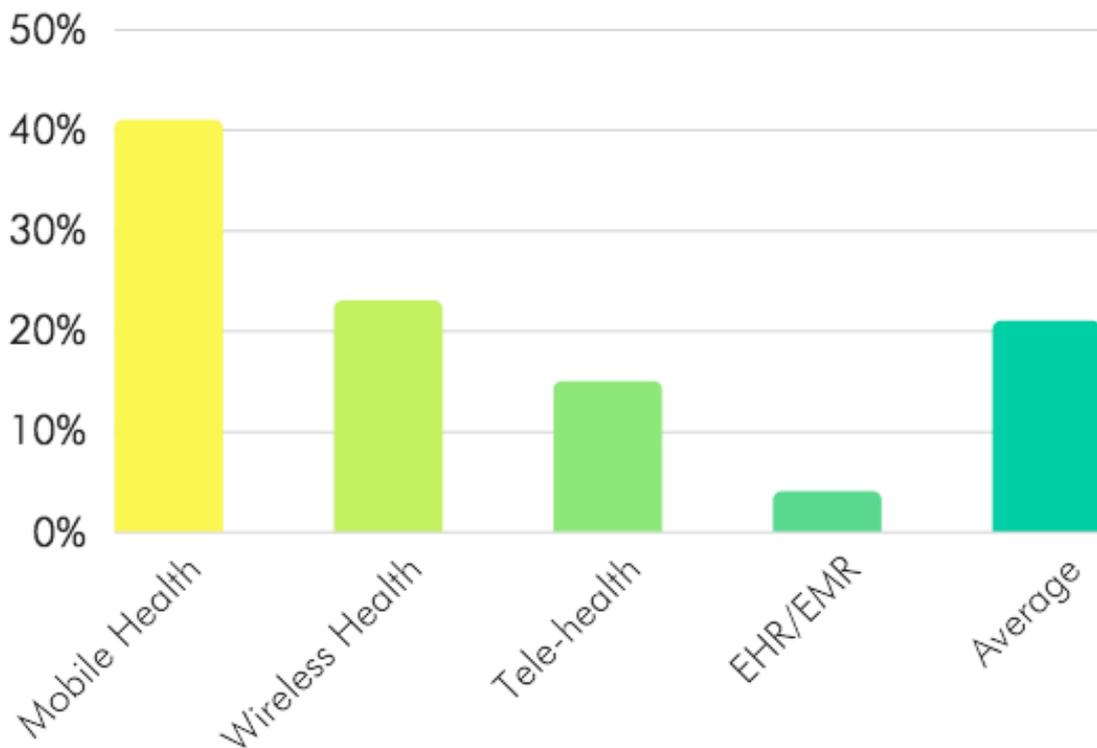
Risks

For one thing, there are all sorts of potential hacking and personal privacy issues with medical apps. According to a review by the Privacy Rights Clearinghouse, many apps send data without encrypting it, and users and patients just don't know about it. Imagine all of the personal and sensitive data that people are inputting into their medical apps; that's a potential powder keg waiting to happen.

The other issue that has some people concerned is the diminished aspect of human touch in the administration of medicine. Since the advent of medical science, it's always been about the longstanding patient-doctor relationship. These apps are changing and revolting against that unquestioned system.[26]

Some doctors are outright warning against losing the very essence of getting to know patients and how that can cause more harm than good.

No matter how you look at the situation, though, what's already clear is that these changes to a more tech-oriented and, therefore, independent-patient model are already taking place and have been for a few years.

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[26] INSIGHTS (2017) The future of healthcare: how mobile MDBcal apps give control back to us [online] available from: https://yMDBalabs.com/future-of-healthcare/#7

5. PAPER PROTOTYPE

AT THE TIME OF WRITING, OUR DEVELOPERS ARE WORKING ON ALPHA VERSION

5.1. Preliminaries for infrastructure development

BLOCKCHAIN NETWORK

The blockchain is a distributed database that contains an ordered list of records linked together through a chain, on blocks. Blocks can be described as sets of individual entities that hold information pertaining to some transactions, for example, financial transactions or medical reports, etc. The blockchain maintains a continuously growing list of records which are distributed and immutable. It is for this reason that many systems built on the blockchain technology achieve secure distribution of assets amongst untrusted clients.

For a client "A" (lets say a patient seeking 2nd opinion) who wants to transfer an asset (her medical reports) to a client "B" (a healthcare practitioner), the asset is verified by sets of nodes and ownership of such an asset is tagged to the client "A". The client transfers the asset through a channel to "B" who becomes the new owner of this asset. All these records of verification, transfer, and change of ownership are recorded in a public database for future transactions and references. In cases where there is a malicious activity, verifying nodes can trace the attributes of the record and resolve the issues. For such systems, there is a need for a database that is highly immutable and provably secure. [27]For transactions between clients who have no idea of the identities of each other, there is an equal need for a system to allow a trust-less but secure transaction between such parties. The blockchain is a perfect fit for resolving these problems associated with trust and change in data in cloud storage. It is highly distributed; which means that every single client part of the network has records of every valid transaction completed on the network. The properties of the blockchain that make it attractive for secure sharing of data are its immutability and "trust-less" transaction execution (Adapted from Xia et al., 2017)

Cryptographic Keys

Cryptographic keys denote the sets of keys established to perform tasks pertaining to the security of a system. For the blockchain-based scheme, keys will perform roles in relation to a. user authentication and membership, b. user verification, c. request generation, and d. request authentication. These keys help to guarantee a level of security of the scheme. The keys include:

• Membership issuing keys
• Membership verification keys
• Membership private keys
• Transaction private keys
• Transaction public keys

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[27] Qi Xia *, Emmanuel Boateng Sifah, Abla Smahi, Sandro Amofa and Xiaosong Zhang (2017) BBDS: Blockchain-Based Data Sharing for Electronic MDBcal Records in Cloud Environments , MDPI

Membership Authentication and Verification

For a user to join the authorised blockchain, there is the need for membership authentication. The verification and acquisition of a user's identity used to generate specific keys in relation to the user needs to be secure through already established systems. Our system will adapt an efficient and secure identity-based authentication and key agreement protocol that guarantees user anonymity as a means to which membership authentication is achieved. Methods necessary setting up a new user as a member into the system is categorised into two parts a. cryptographic techniques; b. sharing of information for account registration and verification for the user.

Pool of Unprocessed Requests

The pool of unprocessed requests (in our case, logging in to the system, waiting for an appointment etc.) is a data pool of blocks which contain requests created by the user for the purpose of contributing data or accessing data from the storage. The consensus node is the entity that fetches data from the pool for processing. Attention should be drawn to the fact that blocks found in the pool are not chained together. They are tagged with a timestamp as in when they arrived in the pool. A suitable algorithm is necessary to define the order at which such blocks will be fetched and processed. A point worth noting is that the pool of unprocessed requests and the blockchain network are two separate entities which are not linked together in any way. The only characteristic between them is the consensus node.

Patients, practitioners, research institutes

User

Issuer, verifier, consensus node, pool of un-processed blockchain network

System Management

Storage

Storage infrastructure containing different classification of data
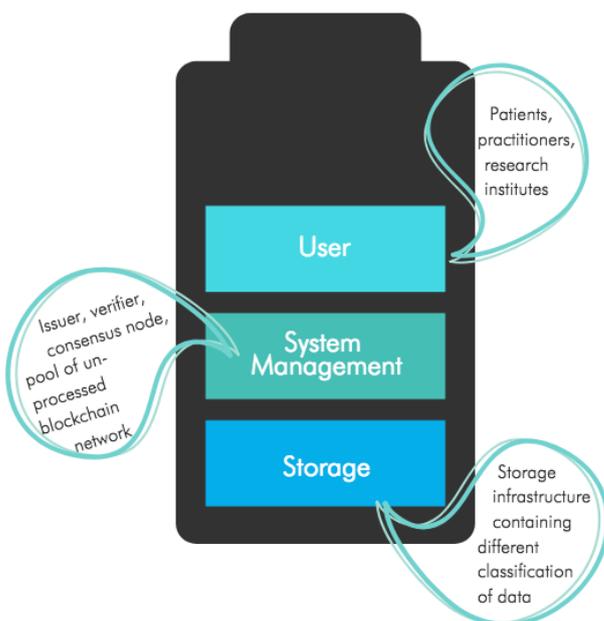
SYSTEM DESIGN

Our system will be formulated as data sharing mechanism used by the blockchain-based medical data sharing infrastructure. This infrastructure will include three entities, namely the a. user (patient and medical practitioner), b. system management (issuer, verifier and consensus nodes); and c. storage, as shown below in fig 4.1 and 4.2.
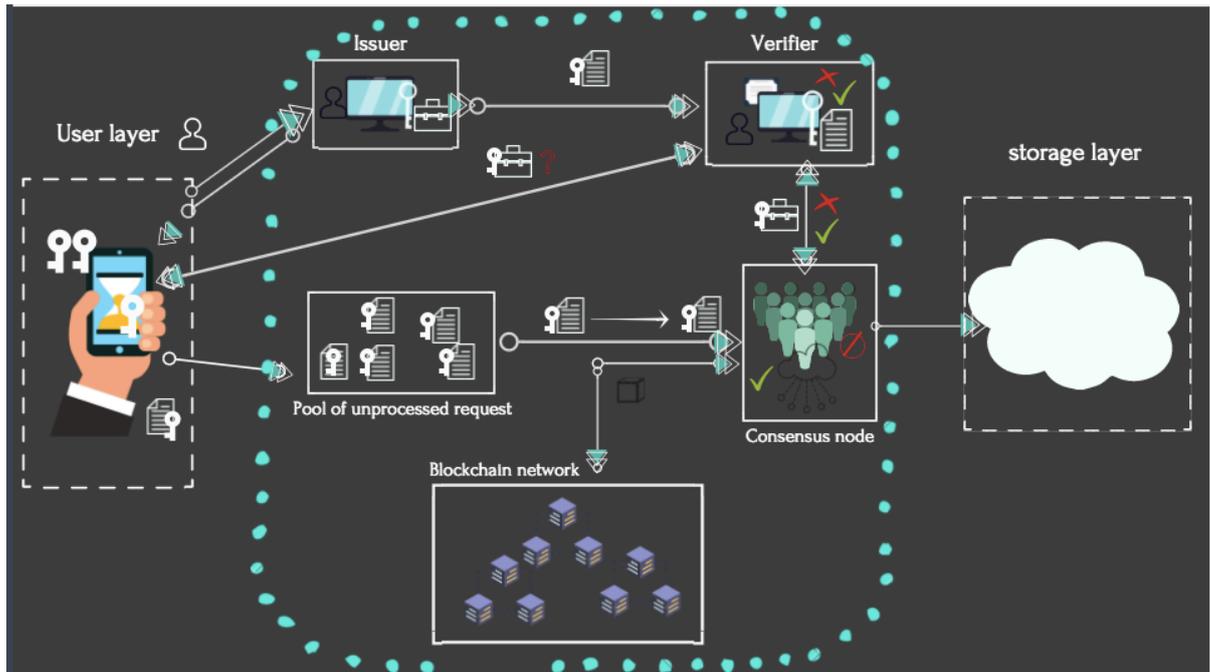
FIG. 4.2 MEDIBITCOIN PLATFORM

5.2. Decentralised-app development

MDB-Intelligence-Development of Blockchain-Based Trusted Review Platform

Through creating and implementing the first Blockchain-based system for trusted Medibit consultation and consultation reviews, the Medibitcoin Network will allow patients' voices to be heard whereas healthcare practitioners will have access to up-to-date, extremely valuable market research data and qualified patient feedback. This data will be the most powerful tool to improve service quality and to establish a loyal patient base.

Through a self-executing Smart Contract, the Medibit review platform will assure optimal autonomy, trust, speed, and safety thus mitigating any risks in connection with manipulations. The blockchain-based feedback system (smart contract) will trigger a dynamic movement in patients and healthcare providers to open MDB-partner wallets. There will be a Medibitc community that will create the prerequisites for the future steps. These steps will be taken to penetrate the global market providing valuable market research. At this moment in time, Medibit's developers are working on the frontend, the database and the smart contract.

This platform is under construction. Before it is presented in the market, the STO crowd-sales would generate 3rd round of funding for the business. STO-crowd sales is planned for Spring'19. Once the STO begins, the marketing global expansion will be implemented, resulting in creating a rapid growing Medibit Community.

Technical Design Overview & Philosophy

Medibit DApp will be built on top of several existing protocols, open-source libraries, and distributed systems. These prior developments in blockchain space, makes Medibit DApp possible today. The Medibit Platform will be built upon the Ethereum blockchain, which is the most widely adopted cryptocurrency platform enabling smart contracts to execute on the blockchain. Important transactional data such as consultant's fee and availability are stored directly on the blockchain. Other metadata such as descriptions, images, reputation, and reviews are stored on the Interplanetary File System (IPFS) and cryptographically linked to the contract. This allows for better scaling and minimises the expensive computing and storage costs associated with doing everything on chain. When a data object is created in the frontend decentralised application (e.g., patient's profile object) and stored on IPFS, a unique IPFS content hash is created to reference this data. This hash is then stored on the Ethereum blockchain. IPFS is a content-addressable, distributed file system, allowing us to trust the integrity of the data even though it is stored outside of the Ethereum network. Storage on the IPFS network is also expected to be significantly cheaper than on the blockchain at the time of this writing. Filecoin-a decentralised storage network will add an important incentive system to ensure the longevity of this data on the IPFS network. It is anticipated that several intended major advances in both Ethereum (Plasma and sharding) and IPFS (use of Filecoin as incentive to increase network speeds and reliability) will significantly improve Medibit Platform's scalability and usability over time.

In addition, three overarching goals in our architecture design are aimed. First, it is intended to keep everything as distributed and trust-less as possible along with balancing the need for performance and scalability. The aim is to avoid single points of failure of our architecture like relying on a single centralised provider. Second, we want to stay within the Ethereum ecosystem and avoid reinventing the wheel whenever possible. Lastly, we are aiming to carefully balance performance and computation efficiency with user experience. As known, having the best architecture in the world, without any user, is pointless.

Medibit Decentralised Application

Medibit decentralised application (DApp) will be an open-source HTML and JavaScript application enabling patients and consultants to connect, communicate, and transact with each other. The DApp further allows consultants a user-friendly way to create, manage, validate and publish listings. The DApp will use js-ipfs4 for connecting to the IPFS network and web3.js5 for smooth integrations with popular browser clients like Mist6, MetaMask7, and Toshi8. The Medibit DApp will be the

first DApp that interacts with the Medibit developer libraries and protocols, but we expect developers to create alternatives offering differentiated user experiences for specific use cases or verticals.
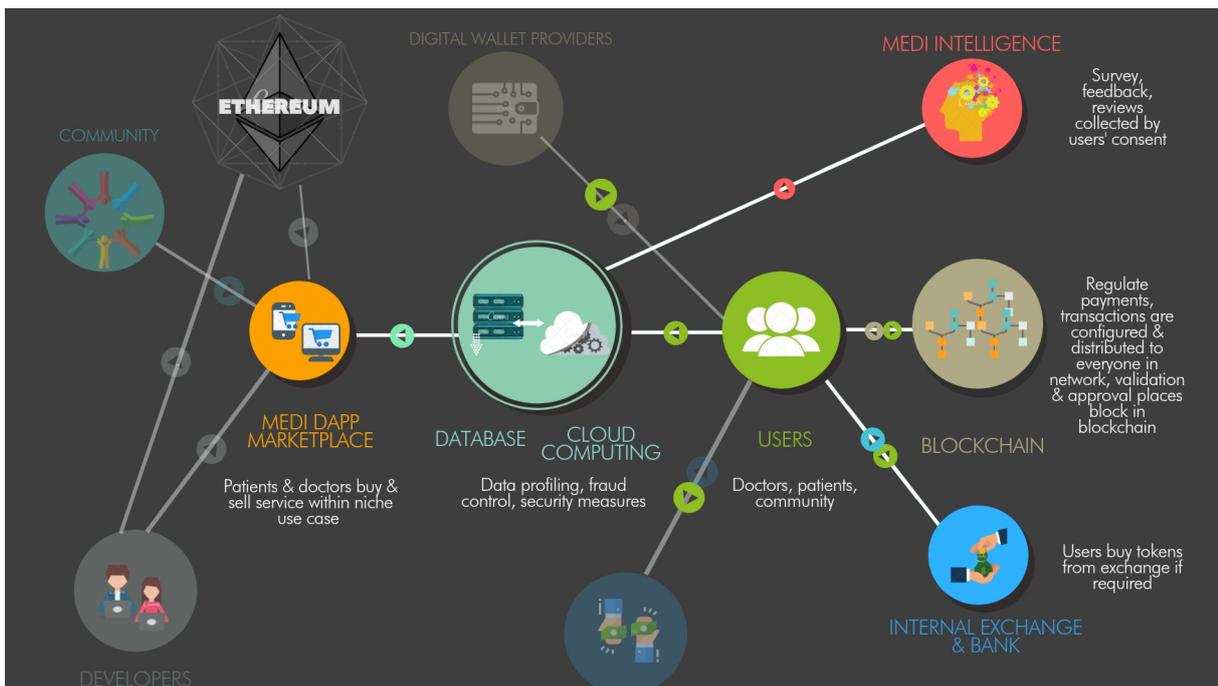

FIG. 4.3 MEDIBIT ECOSYSTEM

Medibit Developer Libraries

Although a dramatic increase in the number of projects pursuing blockchain development in recent times is observed, however, vast majority of software engineers are not familiar with the specific technical challenges of building on the blockchain. At present Solidity is the preferred language for developing on Ethereum. Solidity is actively being developed and consequently changes frequently. There are unique architecture and security issues that come along with building on the Ethereum blockchain. To make the Medibit Platform easier to use, we aim to release the Medibit developer libraries, so that much of complexities can be addressed. These will be open-source libraries that are designed to be much easier to use than directly interfacing with the blockchain and IPFS. Medibit.js, a Javascript library designed to enable web application developers to get started with the Medibit Platform in a much shorter time frame, is aimed to be released. The Github repository for Medibit.js will soon be available on GitHub. Over the period of time, it is expected that third-party developers would develop additional libraries in different programming languages to interface with the Medibit protocols and shared data layer.

Medibit Protocols

The Medibit Platform includes a series of open-source protocols that define standards for marketplace functionalities like patient and consultant's identity, user reputation, listing creation and publishing, representation of booking intervals and rules, and transaction stages. These protocols are enabled by Solidity smart contracts and IPFS. For example, ERC-7259 identity standard will be used in conjunction with the Medibit User Registry to enable user identity on Medibit-enabled marketplace. We also aim to frequently update developer documentation describe a full set of protocols that are used across the platform. The Github repository for various smart contracts will be available within the /contracts directory in the same repository as Medibit.js.

Platform Components Interaction

We are still working on this section and would be providing the details soon. Thanks for your continued support.

Medibit Token

Medibit Token (MDB) is an ERC20 token. The Token will take full advantage of the Ethereum network's built-in wallets, developer tools, to create easy-to-use experience resulting ease of use.

Medibit Tokens are intended to be used for all the transaction carried out on the Medibit Platform. Tokens may also be used to incentivise various forms of participation from the Platform's ecosystem participants. For example rewarding patients and consultants to leave feedback and reviews about user experience. Second, users will be rewarded for taking actions on the Platform, with the goal of creating disincentives for malicious or fraudulent behaviour. Third patients will also be rewarded to share their data with our partners for research and development purposes.

6. TOKENOMICS

6.1. Medibit Tokenomics

<u>Monetary Economics:</u> Medibit is a medium of exchange in return of services. In simpler words its a currency that will be used in an ecosystem. The service as explained earlier is connecting patients and consultants in a use niche case.

<u>Corporate Finance:</u> Securities Token Offerings would raise funds to operate the project.

<u>Market Finance:</u> Medibit is designed to be highly liquid as opposed to IPOs and traceable on exchanges. At present, we are in talking terms with Coinbene, and UBIT to get the token listed.

<u>Game Theory:</u> Token will incentivise itself by 3 means: exchange of service and encourage patients and consultants to review each other in return of earning Medibit; users will be rewarded for taking actions on the Platform, with the goal of creating disincentives for malicious or fraudulent behaviour; and patients will also be rewarded to share their data with our partners for research and development purposes.

<u>Store of Value (SoV):</u> 3 properties of a token/crypto assets should be fulfilled to make it SoV: it can be stored securely; cannot be reproduced easily; and can be traded cheaply. Medibit possesses all of these properties. First its immune to theft as the tokens are stored in offline digital wallet. Second the network will be developed as such so that its security risks are managed. This means securing it against an attacker who might try to change its rules by force. In addition to outside attacks, only project owners would be able to set the monetary policy whereas no incentive would be able to modify it. Third low cost of conversion comes from trading it cheaply.

6.2. Why do we need a token

Providing a prompt and secure service availability, with significantly lesser transaction fee when compared to bank transfers fees is only possible by means of using a digital currency. Immediate payment transfers are crucial in our service model as we are dealing with precious lives, where timing plays crucial role. Factoring in delays of few workings days while making payments via conventional means, can make a difference of saving and losing a life.

6.3. Token Price Appreciation

The growth of the Medibit is highly probable due to the demand of service offering as indicated by our extensive market research. A simple 'demand and supply' principle would fuel token demand. As mentioned earlier, Medibit will have its own marketplace where it would be used as prime currency.

6.4. What does it take for a token to be appreciated in a market & how Medibit check all boxes

A well-designed token….		Medibit Token
has utility within the ecosystem	✓	..is forked from Ethereum, hence supports the ecosystem growth. Not only that, since it will be a mainstream digital currency in its own market place, the utility is obvious.
resists inflationary pressures	✓	• has lower operational cost • has limited total supply 100,000,000 • 50% of the total token supply locked for 5 years • 10% founders' tokens locked for 2 years • 40% of the total token supply will be released during multiple crowd sales event within first 2 years • After 5 years, the remaining 50% of the tokens locked, would be released with due course.
is scalable/ denominational	✓	Yes, can be bought in 18 fractions
is a store of value	✓	Medibit Token and platform are designed and being developed to offer maximum utility to users (developers, buyer and sellers). In providing this utility, the inherent stickiness associated with the underlying asset are: a. theft immunity, b. credibly low inflation (strict guidelines to keep security threats at lowest possible levels and collective commitment to low inflation) and c. low cost of conversion (utility and decentralisation).
is fungible	✓	It is interchangable, uniform, divisible, and developed as per ERC20 standard
is acceptable to the people at large	✓	Medibit is accessible and available for anyone who wants to purchase the token with the purpose of either invest in the project, or buy the tokens now at much cheaper rate and save them for later use
is traded on an exchange	✓	the team is in talking terms with exchanges and expecting soon to be listed.
must incentivise its use	✓	Exchange of value, early bird rewards, incentive provided when consultant and patients leave feedbacks/reviews. Second, users will be rewarded for taking actions on the Platform, with the goal of creating disincentives for malicious or fraudulent behaviour. Third patients will also be rewarded to share their data with our partners for research and development purposes.

6.5. Is Medibit Token Security or Utility Token?

First 20 million Medibit are, "security" token, making them a dividend paying token- "a UK SEC compliant Dividend-paying Asset-backed Security Token" and is backed by the underlying existing and future assets of Medbitcoin Network Pvt. Ltd.. Let us explain, how and most importantly, why?

First, investors should know that only first 20 million MDB are/will be sold as Security Token, vested for first 2 years from the day of purchase, where as the remaining 70 million will be sold as Utility Token. 10% locked for the founders are also Security Tokens. But first lets see what's the difference between both.

WHAT IS A SECURITY TOKEN

A crypto token that passes the <u>Howey Test</u> is deemed as a security token. These usually drive their value from an external, tradable asset. Because the tokens are deemed as a security, they are subject to federal securities and regulations. Given that all the regulations are properly met, such tokens have immensely powerful use-cases.

WHAT IS UTILITY TOKEN

These tokens simply provide users with a product and/or service. Think of them like gateway tokens. As Jeremy Epstein, the CEO of Never Stop Marketing, explains, Utility tokens can:
- Give holders a right to use the network
- Give holders a right to take advantage of the network by voting

Since there is an upper cap on the maximum token availability, the value of the tokens may go up because of the supply-demand equation.

The utility of MDB token is exchange of service i.e. consultant/ specialists healthcare practitioners and or doctors provide 2nd opinion on patients' initial diagnosis.

This leads us to a very important development within the token side of our business structure. We are "Utility-Security" structure. This means that until the sale of first 20 million MDB, we will be operating as STO, and there after we would be selling our tokens as utility tokens. As explained earlier, the purpose of utility tokens would be fuelling Medibit Dapp and <u>not</u> to fund the project.

WHY ARE WE LABELLING first 20 MILLION AS SECURITY TOKENS

These will act like a bridge between legacy finance and the blockchain world. The investors (contributors/buyers) of first 20 million MDB will have 2 options to receive their asset: a. buy smart contracts or b. utility tokens. Smart contract will act as dividend share of the company. Holders or share holders will be eligible to receive dividends on net profits until the principal buyer holds on to the smart contract. This means that smart contracts are non-transferable. Smart contracts are

exchangeable, with utility tokens. However, once smart contracts are exchanged, the right to receive dividends would be nullified.

HOW SECURITY TOKEN BENEFITS INVESTORS & FOUNDERS, EQUALLY

The prime reason to sell tokens as security tokens is to fund the project. This means, that the project will be funded by the investors' money, making investors eligible to receive dividends on company's net profits.

Other reasons are:

Bring credibility back: As of right now, the cryptocurrency / ICO space is a little dicey, to say the least. There is a real deficit of accountability in the space because of a lack of regulation for utility tokens. In order for the ICO space to regain some credibility, it should make sense to somehow amalgamate the cryptocurrency space and the legacy finance space together.

Improving traditional finance: Traditional financial transactions can be a little expensive because of all the fees associated with the middlemen like bankers. Security tokens remove the need for middlemen which reduces fees. Therefore smart contracts may reduce the complexity, costs, and paper works.

Speeding up execution: Traditional finance institutions have a lot of middlemen involved which simply increases the execution time. By removing these middlemen, securities allow for faster execution time for successful issuance of security tokens. Because of this increased speed, the security tokens are bound to become attractive investments.

Exposure to free market: Investment transactions today are extremely localised. As an example, Chinese investors find it extremely hard to invest in private UK companies and vice-versa. Security tokens will make the project and company behind the project attractive, and ethical making anyone living across the globe, confident of the company. This exposure to free market helps in increasing asset valuation.

Huge number of investors can be tapped: Since we can market our project and deals to anyone on the internet, the contributor/ buyer/ investor base increases exponentially, giving the company huge exposure and reach.

Reducing solicitors' services: Keeping the project cost as planned is crucial to project success. Therefore any possibility of reducing the project and business cost at minimum is important. By means of issuing first 20 million MDB as security, smart contracts will be used hence avoiding a need of solicitors that typically add on to the potential middlemen involved in the project.

<u>Lack of institution manipulation:</u> Due to the drastically reduced number of middlemen, the probability of corruption and manipulation by financial institutions such as exchanges also decrease drastically and may even be removed from the investment process.

<u>Easier liquidation:</u> Secondary trading on security tokens will be made simple through licensed security token trading platforms and it will be extremely easy for investors to liquidate security tokens.

6.6. How dividends will be issued?

Medibit will pay token holders 30% of its net profits as dividends. Again, only first 20 million MDB holders will be paid dividends.

Incentives for the investors: Price appreciation, and receive dividends
Incentives for founders: Growth in customer database, and increase the value of our own token. At this point a common concern for the investors would be 'what if the founders' interest is not aligned with token holders'. A common practice in corporate world is founders incurring artificial costs where the money goes directly to them as opposed to forming a net profit which is used for dividends. This risk exists pretty much with any company. As we promise transparency, in our case, we would be avoiding price manipulation through observing best practices, such as: getting our accounts audited by independent auditors; and b. the value increase in their own token stake can far outweigh the siphoning of funds.

Note to readers: Due to an unregulated market, we would consistently be updating this chapter. We appreciate your patience an understanding.

7. TOKEN SALES PHASES

Number of total MDB Tokens: 100,000,000
Circulation Supply Targets in first 2 years (2018-20): 30,000,000 MDB / 30% of Total Token supply

7.1. Phase 1: Private sales

Summer-Autumn 2018
CLOSED

Phase duration: 6 weeks or until the cap of 100,000 MDB is reached
Phase sales target: 90,000,000 MDB OR MDB in equivalent to 100 ETH

1,290,951 MDB sold, soft cap achieved.

Minimum contribution towards token sale by contributors: 400 *MDB* equivalent of 1 ETH
Maximum contribution towards token sale by contributors: 25,000 *MDB* equivalent of 25 ETH

This phase invites close online and offline community members and early contributors to obtain MDB tokens. This ensures that MDB tokens are well-distributed amongst strategic believers and supporters, and users of our network.

Early bird rewards: up to 25% extra MDB Tokens for all accepted contributors

The company reserves the right towards introduction of "invite-only Private Pre-sale" contribution period, where higher rewards may be awarded during this Private Pre-sale phase at Project Team's discretion. The MDB Tokens sold during this phase will not exceed 50% of all the available MDB Tokens sold to the contributors.

7.2. Phase 2: Pre-STO Sales

December 2018

This phase invites contributors from community.

Duration: 4 weeks

Target amount of distributed MDB tokens: 6,000,000 + unsold tokens from previous phases
Minimum contribution towards token sale by contributors: 400 *MDB* equivalent of 1 ETH
Maximum contribution towards token sale by contributors: 25,000 *MDB* equivalent of 25 ETH

	Rewards	Duration	Date	Soft Cap	Hard Cap	Sold
Private Sales	25%	8-12 weeks	Summer-Autumn '18	750,000 MDB 2000 ETH	1,500,000 2400 ETH	1,290,951
Pre-STO	25%	4 Weeks	Dec'18/ Jan'19	3,000,000 MDB/X ETH	6,000,000 MDB/ 23040 ETH	-
STO-Crowd Sales	25%	6 months	Spring-Summer '19	11,250,000 MDB/X ETH	22,500,000 MDB/ 34560 ETH /	-

This target sum can only be approximated as it is likely to vary due to fluctuations in the ETH/USD exchange ratio. Another fact that needs to be factored in is that the total number of tokens sold might increase by the number of unsold tokens from previous phases.

Contributors receive their tokens after Know Your Customer (KYC) is successfully processed, payments are received and account verification is completed by third party. However tokens will not be trade-able for the crowd-sale phase followed by a short confirmation period. This is needed to ensure that across all phases, token distribution had been executed correctly. After successful validation of the process, all tokens will be transferable.

7.3. Phase 3: STO Crowd Sales

Spring- Summer '19 (20th March-21 June '19) across 3 weeks cycle

This phase invites contributors from general public.

Phase duration: 12 weeks or until the soft cap of 15,000,000 MDB is reached
Phase target: 22,500,000 (hard cap) / 11,250,000 (soft cap) MDB OR MDB in equivalent of 56,000 ETH (hard cap) / 28,125 ETH (soft cap).

This target sum can only be approximated as it is likely to vary due to fluctuations in the ETH/USD exchange ratio. Another fact that needs to be factored in is that the total number of tokens sold might increase by the number of unsold tokens from previous phases.

Phase rewards: 25% extra MDB Tokens for all accepted buyers
Target amount of distributed MDB tokens: 22,500,000 + unsold tokens from previous phases
Minimum contribution towards token sale by contributors: 1 ETH
Maximum contribution towards token sale by contributors: 25 ETH

Contributors receive their tokens after Know Your Customer (KYC) is successfully processed, payments are received and account verification is completed by third party. However tokens will not be trade-able for the crowd-sale phase followed by a short confirmation period. This is needed to ensure that across all phases, token distribution had been executed correctly. After successful validation of the process, all tokens will be transferable.

7.4. MDB Token Distribution

Some tokens will have a vesting period as scheduled below:

- Tokens issued to the team will have a vesting period of 2 years;
- Tokens issued to the community (less privileged patients who can't afford the services), advisors and general public will not have a vesting period.
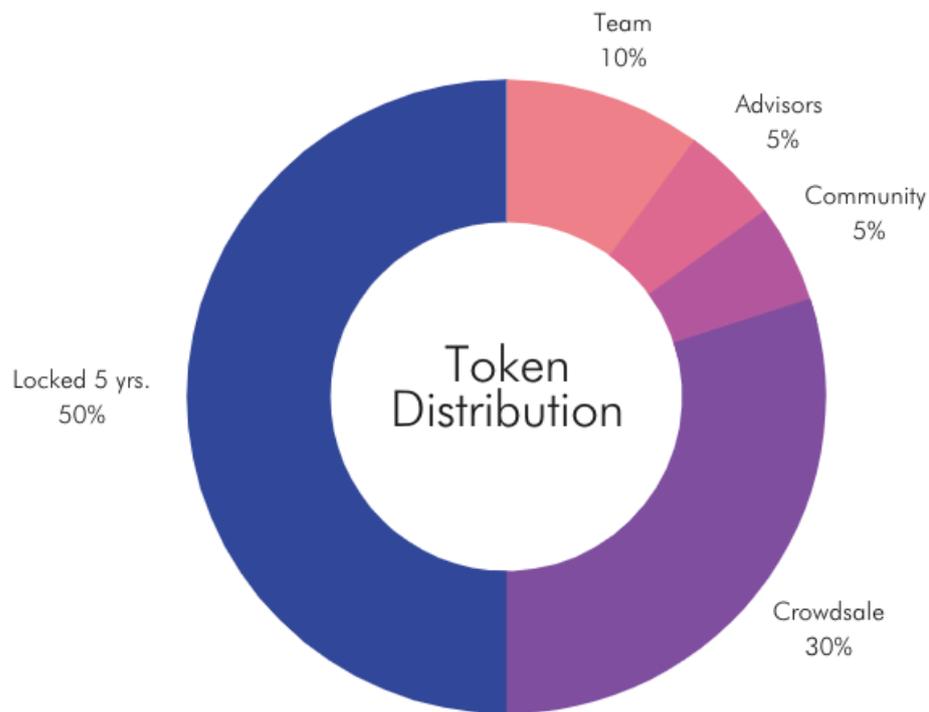

FIGURE 5.1. TOKEN DISTRIBUTION BY %

8. FUNDS DISTRIBUTION

The funds will be allocated across three phases:

- Phase 1 - Development: £1.3 million

- Phase 2 - Scaling: £1.3 million

- Phase 3 - Marketing: £1.3 million
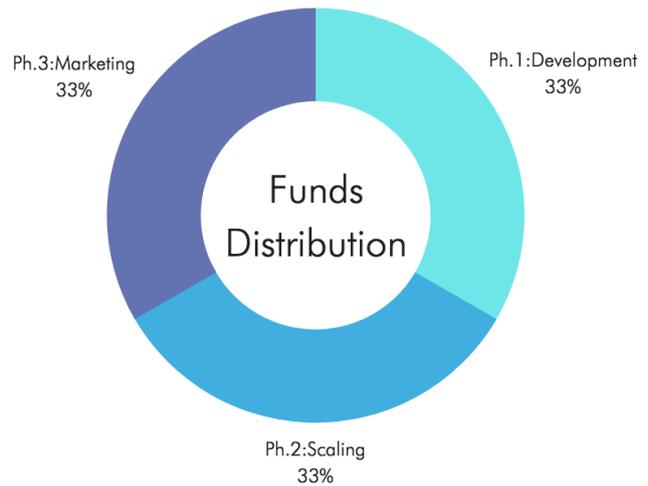
8.1. Phase 1: Development

- 53% of sales covers the technical development costs of the platform;

- 10% of sales covers the costs of non-technical product development, including project management, team management and business development;

- 11% of sales covers the costs of expanding and developing business network;

- 5% of sales covers the first marketing phase, covering basic marketing operations, including advertising campaigns for user acquisition and branding;
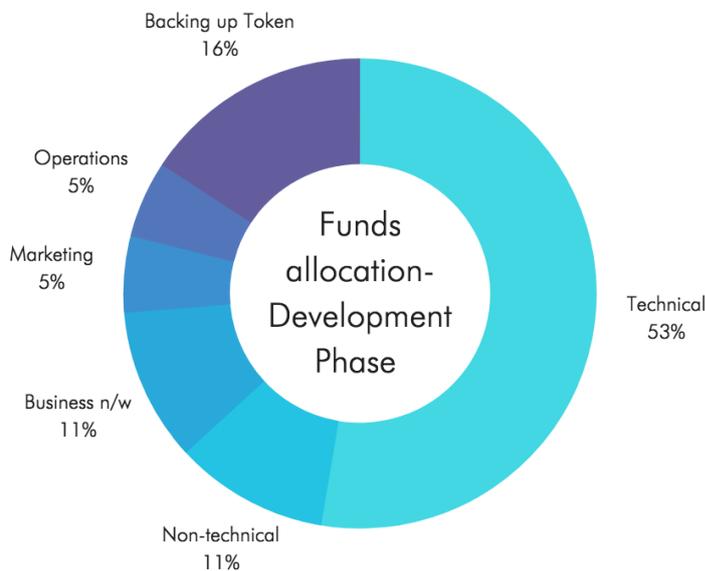
- 5% of cost covers day-to-day operations, office rent, office equipment, travel expenses and legal fees.

- 16% of the funds will be put aside to back the circulating tokens

8.2. Phase 2: Marketing

- 20% of sales covers the direct sales to our target audiences, including direct calls and personal meetings;

- 10% of sales covers the costs of negotiating potential collaborations;

Funds allocation- Marketing Phase

- Backing up Token 15%
- Direct Sales 20%
- Collaborations 10%
- Global PR 10%
- Global Marketing 45%
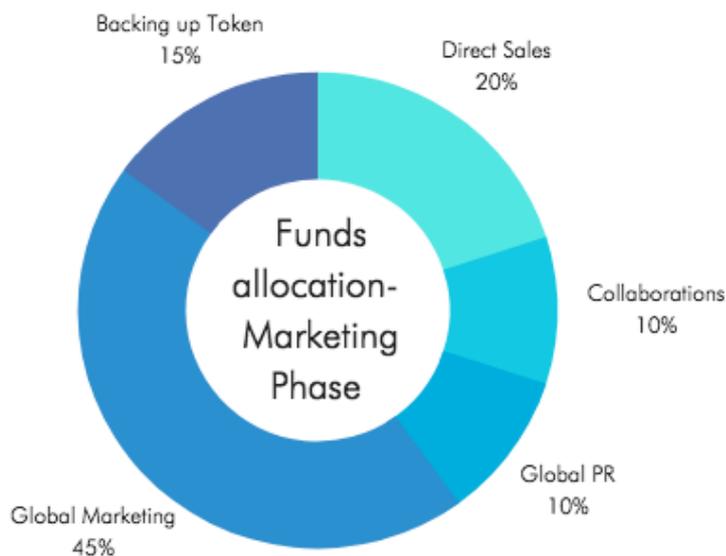
- 10% of sales covers the costs of funding a global, ongoing PR campaign, targeted towards specialised and mainstream MDB

- 45% of sales covers the cost of ongoing global marketing campaign covering all relevant MDB outlets, designed to increase our DApp user database and assure platform liquidity;

- 15% of the funds will be put aside to back the circulating tokens

8.3. Phase 3: Scaling

- 30% sales covers the technical development costs of adding users from new markets into the database as well as adding additional languages;

- 10% sales covers the costs of non-technical product development, connected directly to the global scaling of the product;

- 10% sales covers additional travel expenses and setting up offices in new markets;

- 10% sales covers the costs of negotiating partnerships with additional platforms, including personal meetings;

- 20% sales covers fund the marketing on new markets, including advertising campaigns for user acquisition and branding;

- 10% sales covers cover day-to-day operations, office rent, office equipment, travel expenses and legal fees.

Funds allocation- Scaling Phase

- Backing up Token 14%
- Expand Database 29%
- Operations 10%
- Global Scaling 10%
- Market expansion 10%
- New Markets 19%
- Collaborations 10%

- 10% of the funds will be put aside to back the circulating tokens
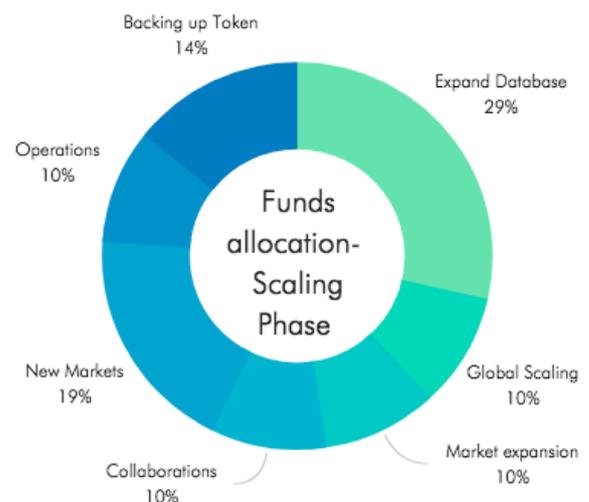
9. PROJECT COST

PROJECT TIMELINE: 36 MONTHS	
TASK	**COST IN GBP**
Yellow paper writing+ expert review +translation in to 7 languages Chinese, Japanese, Korean, Russian, German, French, Spanish @ £240 each	15,000+ 1,680
White paper revision, update and translation into 7 languages Chinese, Japanese, Korean, Russian, German, French, Spanish @ £240 each	10,000+ 1,680
Website development, maintenance (STO project)	12,000
Website development of high-quality, secure website + maintenance (DApp launch)	20,000+ 10,000 (maintenance)
DApp development(main developer +team)	266,000
Blockchain development	15,000
DApp running on Ethereum Network for @ 25,000/year	50,000
Gas to transfer tokens sold	10 ETH/10,000
Security audits	50,000
Legal expenses	50,000
Exchange listing	250,000
STO listing on top 10 listing platforms such as ICO bench	30,000
Marketing & PR	200,000
SEO marketing for help grow investors' interest in STO project organically	£96,000
Networking & business development	100,000
Social media marketing & management including content writers & creators for channels: YouTube, Twitter, Telegram @ 25,000/ month	60,000
Influencer marketing YouTube	50,000
ADVERTISING	
Paid advertising on Channels @15,000/channel (Twitter, Instagram, LinkedIn, Quora, Reddit, Bitcoin talk,)	90,000 - 150,000
Crypto ads (Token Ad, A-Ads, Coinzilla, medibit.io, Coin traffic, Propeller ads)	100,000
PERSONNEL	
Consultants- 2 10 hours/week@ £75	75,000
Salaries*2	200,000
Total	1,732,360

10. PRODUCTS & REVENUE STREAMS

During the pre-STO and STO phase, our prime product is our token. Post STO launch, our products will be MEDIBIT-DApp. The platform will have 2 income streams: Transactions carried out via MEDIBIT-DApp, MEDIBIT-Intelligence, MEDIBIT Exchange and Bank.

10.1. Medibit Tokens (MDB)

For our system to work, MDB that had been forked from Ether, is a necessary element- a fuel that runs the distributed application platform created in Ethereum. It is a form of payment made by the patients who use our platform, to the machines executing the requested operations.

MDB Token will be traded in its own marketplace i.e. MEDI-DApp where it would be traded as a mainstream currency.

10.2. MEDIBIT-Decentralised Application (DApp)

The concept of DApp is still in its infancy, hence a standardised definition of DApp is yet to be provided. Built on Ethereum platform, one out of 3 categories that concerns our project is defined as "semi-financial applications, where money is involved but there is also a heavy non-monetary side to what is being done; a perfect example is self-enforcing bounties for solutions to computational problems.[28]" The simplest explanation of DApp in the context of our project though, is that DApp are similar to apps, however, these are built on blockchain-based systems such as Ethereum. MEDI-DApp will have following features:

- It will be open sourced which means that it can be governed by autonomy and any changes will be decided by the consensus, or at least by majority of the users. The code base will also be available for scrutiny.
- It will be decentralised which means that all records of the application's operation will be stored on a public and decentralised blockchain so that any pitfalls of centralisation can me mitigated.
- It will be incentivised which means that validators of the blockchain will be incentivised by rewarded with MDB tokens.
- Lastly the community's agreement on a cryptographic algorithm to show proof of value will be needed. Given the fact that MEDIBIT-DApp will be built upon Ethereum, it will be using PoW with plans for a hybrid PoW/Proof of Stake (PoS)5 in the future.

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[28] Github (2018) A Next-Generation Smart Contract and Decentralized Application Platform [online] https://github.com/ethereum/wiki/wiki/White-Paper#applications

10.3. MEDIBIT-Intelligence

This product will be one of the crucial revenue streams for the business. An intelligence unit will collect all the Medical records (consultancy and diagnostic reports) only by the consent of the users/providers. Users would be made aware that their agreement would allow us and our partnered projects to analyse it and use it for improving well-beings of millions around the globe. This unit will be backed by an expert team of researchers and analytics who would partner with other clinical research projects.
More details will be provided as we raise the funds and develop the product, further.

10.4. MEDIBIT Exchange & Bank

Both of these, will be internal to the business and would serve the traditional purposes. Both would be connected to external exchanges and banks. The purpose would be reducing the cost of hiring our services by the buyers. As an example, if a buyer buys our tokens from external exchange such as Binance to pay consultant's fee, he would be paying a fee to the exchange. Buying tokens form MEDIBIT-Exchange means, buyer pays fraction of the cost he would be otherwise paying Binance. The role of MEDIBIT-Bank would be similar, where buyer pays only fraction of fee cost paid otherwise to external banks.

More details will be provided as we raise the funds and develop these units, further.

11. USE CASE

MEDIBIT-DApp will be designed to provide a directory of healthcare practitioners with profiles, photos, credentials, research publication (if any), patient ratings, addresses, and directions. Users can search for practitioner by location, gender, medicine specialty, response time-frame, and request an appointment directly from the DApp. Patients will be requesting second opinion on their primary care diagnosis. The MEDIBIT-DApp will be able to upload user's medical records / diagnostic reports, imaging, and test results for online review. The benefits it will deliver are transparency, hence empowering users to manage their own health. Other benefit would be significantly cutting the request / response time in contrast with the existing healthcare systems across the globe. Most importantly, healthcare practitioners would be able to perform on the basis of patient's symptoms combined with her experience. Third, the service would optimise treatment and reduce unnecessary procedures and risks.

Global healthcare systems have been reportedly bringing our attention towards issues such as lack of patient-centric care, addressing chronic health conditions, high fatality rate due to misdiagnosis and or undiagnosed medical conditions and lack of transparency[29]. Secondly, global healthcare systems accessed privately via medical insurance route, are costly that doesn't leave much flexibility for buyer's affordability. Third, healthcare systems require practitioners to follow strict guidelines, policies and procedures. Fourth, the burden of multiple referrals, explaining symptoms to new physicians and finding out that their medical history has gaps in it are all too real.

This leaves us with pivotal question: do healthcare systems train practitioners to perform on the basis of 'one size fits all'? What further supports the validity of this question are the research studies pointing towards millions of suffering reported only within the US and UK. The unknown figures across underdeveloped countries could be shockingly painful to learn.

MEDIBIT-DApp is conceptualised to address all the above problems, by simply connecting patients seeking second opinion on their initial medical diagnostics and healthcare practitioners irrespective of their healthcare systems.

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[29]Deloitte (2016) Global health care challenges need global solutions
 [accessed online] from: https://www2.deloitte.com/us/en/pages/life-sciences-and-health-care/articles/health-care-current-december6-2016.html

12. LEGAL FRAME WORK

MEDIBIT

An STO Project of MEDIBITCOIN NETWORK LTD

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MEDINetwork

W E   L O V E   B E I N G   S O C I A L

We are operating and incorporated (11268735) under legal and regulatory treatment in the United Kingdom. The first thing that needs to be clarified is whether or not tokens regulated investment? At present and in best of author's knowledge, our tokens aren't "specified investments" as we aren't offering any rights to "token-holders" typically enjoyed by shareholder (e.g. entitlements to dividends declared, profits or the proceeds of the assets of an insolvent company; or bondholder (e.g. a right to the repayment of a sum of money); or a participant in a fund (for example, to profit or income from the acquisition, holding, management or disposal of the fund property).

This means our tokens are 'not regulated' investments in the UK. Putting it into perspective, our token Medibit falls within 'supply of digital content' under the heading 'not regulated' investment. As per UK Token Regulation 'supply of digital content' regulation is explained as "specific consumer protection legislation in relation to the supply of "digital content" (i.e. data which is produced and supplied in digital form). Tokens may arguably amount to, or involve, digital content, and therefore trigger protections where consumers are involved in the token offering. These protections involve certain terms being implied as to the digital content being satisfactory quality, fit for purpose and as described. The terms of consumer contracts are also subject to "fairness" test, which could apply to the relevant subscription documentation in the context of a token offering. Consumers may also be entitled to enforce rights to a rebate or refund in certain circumstances."

Medibit, the 'token' and Medibit 'token sales' both comply with above definition.

At the writing of this White Paper, author notes "implementation of crypto market regulations in the U.K. would take about two years, given that proposals in a recent House of Commons Treasury Committee (HM Treasury) report begin to move forward"[30]. Therefore we are keeping up any news regarding the enforcement of further regulations regarding token-sales in the UK. We are actively in talks with corporate and insurance law experts for guidance purpose within our domain.

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[30] Coin Telegraph (2018) Crypto Regulations for UK Could Take Two Years, Says Legal Expert [online] https://cointelegraph.com/news/crypto-regulations-for-uk-could-take-two-years-says-legal-expert [accessed 23.11.18]

13. PROJECT ROADMAP

2017 Q4

IDEA CREATION

CONCEPT DEVELOPMENT

VALIDATION & DEMAND OF THE CONCEPT
ACQUIRED BY ORGANISING DISCUSSIONS WITH
EXPERTS BACKED BY EXTENSIVE MARKET RESEARCH

WHITE PAPER PRODUCED & RELEASED TO BLOCKCHAIN
COMMUNITY FOR VALIDATION. DESCRIPTIVE PROTOTYPES
DEVELOPED TO REFINE PRODUCT OFFERINGS. WEBSITE
DESIGN, DEVELOPMENT & DESIGN- AN ONGOING
PROCESS

CONDUCTING PRIVATE SALES FOR PROJECT
FUNDING, WORKING ON ALPHA TESTING
LEADING TO PREPARING FOR DEMO MEDIBIT
PLATFORM AT LIVE EVENTS

INITIAL TOKEN DISTRIBUTION & RELEASE PLAN,
DISCUSSED FOR VALIDITY WITH EXPERTS

2018 Q1

BUILDING TEAM THAT LAST BEYOND STO, WHITE
PAPER REVISION, MAKING CORRECTIONS AS
NEEDED, MULTI-LEVEL MARKETING STRATEGY
DEVELOPED

KEEPING UP WITH LEGAL DEVELOPMENTS.
MANAGING & TWEAKING DOCUMENTS IN LINE
WITH LEGISLATIVE REQUIREMENTS.

ALPHA TESTING OF MEDIBIT PLATFORM, ARCHITECTURE &
DESIGN, TESTED WITH THEORETICAL VALIDITY

2018 Q2

PRE-MINED ERC20 SECURITY TOKENS CREATED
CALLED MEDIBIT (MDB), TOKEN- NOMICS
DEVELOPED

PREPARE & SEND OUT NEWSLETTERS TO
THE COMMUNITY, CHANNELS CREATION:
TELEGRAM, DISCORD, HYPE BUILDING
AROUND THE PROJECT

COMMUNITY BUILDING: BUILD UP USERS OF OUR DAPP
BEFORE LAUNCHING, COMMUNITY ENGAGEMENT. SETUP
COMMUNITY CHANNELS- MEDIUM, QUORA,
BITCOINTALK, SINA WEIBO (CHINESE MICRO BLOGGING),
WECHAT & QQ CHAT)
WHITE PAPER REVISION, UPDATES & TWEAKING AS NEEDED

PRIVATE SALES CARRIED, COMMUNITY BUILDING BEST
PRACTICES: HIGH LEVEL ENGAGEMENT &
TRANSPARENCY

2018 Q3

INITIATE COMMUNICATION
WITH EXCHANGES

TOKEN SALES PLAN: INITIAL SALE,
SEQUENTIAL SALES, PRIVATE SALES
CONTINUES

TOKEN SECURITY MEASURE IN PLACE
BY MEANS OF ASSIGNING
'MULTISIGNATURE' MEASURE

2018 Q4

PREPARING FOR CROWDSALE IN SPRING '19,
CURRENT ACTIVITIES: INTEGRATION OF KYC
PROVIDER, GETTING ICO CABINET- DAICO
ON BOARD, MARKETING & ADVERTISING,
WEBSITE SECURITY & STABILITY, BRAND
STORYTELLING, COMMUNITY BUILDING
CONTINUES

PRE-LANDING EMAIL CAMPAIGN
WHITE PAPER UPDATES, PR
RELEASE PREPARATIONS, ICO
PUBLISHING PLATFORMS
EVALUATION

BRAND STORYTELLING; PRE-STO
LAUNCH; RECRUITMENT/TEAM BUILDING;
TELEGRAM CHANNELS IN RUSSIAN,
MANDARIN, ARABIC, HINDI, GERMAN;
CHANNEL COMMUNICATION ROUND
THE CLOCK

CHANNELS CREATED AT BITCOINTALK,
DISCORD, REDDIT; BUILD COMMUNITY
THROUGH CROSS-CHANNEL INVITES;
ROUND THE CLOCK COMMUNICATION

SEND OUT NEWSLETTERS, UPDATES ON PROJECT
PROGRESS, FUND ALLOCATION & COURSE OF
ACTION FORWARD, HYPE BUILDING AROUND
THE PROJECT

WEBSITE CONTENT UPDATE, PR CAMPAIGN
PREPARATION, SEO, GOOGLE AD DISPLAY,
CRYPTO PLATFORMS AD DISPLAY

THIS IS A WORKING DRAFT, HENCE SUBJECT TO CHANGE

2019 Q1

PRE-STO LAUNCH: EMAIL MARKETING CAMPAIGN TO ATTRACT WHALE INVESTOR, EXPANDING NETWORKING ONLINE & OFFLINE CHANNELS, HYPE BUILDING AROUND THE PROJECT, CONSIDERING ANY COLLABORATIVE OPPORTUNITIES, FINALISING PR CONSIDERATIONS, LANDING WEBPAGE DESIGN & SEO

MEDIA PROFILE BUILDING, PRESS KIT PREPARATION, FINALISING MARKETING STRATEGY, MEDIA PLANNING, BOUNTY CAMPAIGN PLAN, PRE-LANDING PAGE ANALYTICS SETUP, COMMUNITY EXPANSION, CHANNELS MANAGEMENT, NEWS BROADCASTING ON CHANNELS, ORGANISE Q&A SESSIONS FOR COMMUNITY, TRACK CAMPAIGNS FOR THEIR EFFECTIVENESS & REVISE AS NEEDED

STO CROWD SALES ON, BUILD DATABASE OF INTERESTED INVESTORS & THEIR STATUS IN INVESTMENT PROCESS

EXPAND COMMUNITY BLOG ON MEDIUM & WEBSITE, EXECUTE STO CROWD SALE MARKETING CAMPAIGN, BOUNTY CAMPAIGN LAUNCH (MARCH '19), SMM MANAGEMENT (TWITTER, LINKEDIN, FACEBOOK), EXECUTE & RUN EMAIL MARKETING (SUBSCRIBERS/FOLLOWERS),

PRESS RELEASE, DAILY REMINDER & CAMPAIGN PROGRESS PRESS RELEASE, HYPE BUILDING AROUND THE PROJECT

SMART CONTRACTS, MIGRATIONS & TEST, INTEGRATION OF SMART CONTRACTS FOR DECENTRALISATION OF PLATFORM, EXECUTE MARKETING CAMPAIGN (EMAIL, SSM), KEEPING COMMUNITY POSTED, PAID LISTING PUBLICATION OF STO PROJECT

2019 Q2-Q3

COMMUNITY CENTRIC COMMUNICATION & INTERACTION MANAGEMENT, 24/7 CONNECTIVITY WITH COMMUNITY PRE & POST STO PHASE, INCREASED SECURITY MEASURES AGAINST POSSIBLE CYBER ATTACKS

RESTRICTING TELEGRAM SUBSCRIBERS FOR 30 MINUTES PRIOR TO STO LAUNCH TO AVOID ANY SPAM LINKS WITH PRIOR NOTIFICATIONS & SIMILAR MEASURES ACROSS DIFFERENT CHANNELS

STO CROWD SALES-2ND FUNDING ROUND THROUGH

2019 Q4

TOKEN ISSUANCE PLAN: INITIAL SALE, SEQUENTIAL SALES, KYC & AML CHECKS CARRIED OUT BY 3RD PARTY PRIOR TO TOKEN ISSUANCE. KEEPING CONTRIBUTORS UPDATED WITH PROGRESS

TOKEN SECURITY MEASURES ENSURED, CYBER SECURITY MEASURES IN PLACE, SOCIAL MEDIA & CHANNELS SECURITY/ AVOID SPAMMING MEASURES IN PLACE

2020

BUILD WORKING PROTOTYPE, BETA TESTING

MARKET EXPANSION & PENETRATION, LIVE TRIALS, TOKEN REGISTRATION ON EXCHANGES, DIVERSIFY FUNDS RAISED, COLLABORATIVE PARTNERSHIPS

ECOSYSTEM DEVELOPMENT ATTRACTING WHALES, INSTITUTIONAL INVESTORS, SMALL PARTICIPANTS, PARTICIPATION FROM AN EXISTING COMMUNITY FOR PROJECT FUNDING & SUPPORT SYSTEM

TESTING PLATFORM LAUNCH, IOS/ANDROID DEVICES COMPATIBILITY CHECKS, KEEPING COMMUNITY ENGAGED, CARRYING OUT AMA

SEND OUT NEWSLETTERS, UPDATES ON PROJECT PROGRESS, FUND ALLOCATION & COURSE OF ACTION FORWARD, PR RELEASE, DAPP LAUNCH MEDIA PLAN IN PLACE

FURTHER DEVELOPMENT OF PLATFORM, INTRODUCING CONCEPT OF MEDI EXCHANGE & BANK + MEDI INTELLIGENCE. ECOSYSTEM DEVELOPMENT & SCALING

18. FINAL THOUGHTS

Traditional investors don't like to invest in STO projects

Being in this industry for almost 2 years by now, one most common belief we come across is that even though STOs seem very interesting and exciting, investing into this space really scares most of the people. We don't blame them because even though Blockchain startups have collectively raised over $3.6 billion USD as of September, 2018, a huge portion of these STOs haven't started operations yet. A white-paper and template website, and in some cases high-profile advisors, are all a majority of these Blockchain startups have. And the fact that people are willing to invest in such opportunities speaks to an underlying hunger that the 21st-century investor has for investment opportunities that promote fairness, improved transparency and accessibility.
So investing in this industry that is yet to be regulated, with projects based on promises in a white-paper is risky. With the present structure of fundraising based on a white-paper, it will be difficult to make Blockchain-based investments go mainstream. Even the co-creator of Ethereum thinks 90 percent of STO project will eventually crash. Most investors want to understand what they're investing in, see reasonable proof that the business is well placed to be successful over the long haul and have more assurance on how the funds invested will be used.

So how do We, the Medibitcoin STO Project Team, make investors feel more secure?

Its fairly simple! We need to rethink the way STO is done today to improve our public acceptability.

STOs who want to improve their investors' confidence makes the startup team vest their token allocation for a certain period after the STO. In other words, the team is usually not allowed to sell (dump) their tokens within a period in order to alleviate fears of a pump and dump scheme. We would be strictly controlling our token sale so that market is not flooded with the tokens in any one given point in time. Secondly, any token holder can sell the tokens, at any point in time as soon as its registered in the exchange(s). However we wouldn't recommend this as holding on to tokens for longer would benefit holders in 2 ways: a. price appreciation with increased used of our platform; and b. once in exchange, the token price is expected to reach somewhere from £1-4, making the service pricey.
Understanding that a traditional investor wants more security of his investment, we would also be adding an extra layer of security to boost investors' confidence farther by setting up STO token such that investors can get a refund of their investments if certain project milestones are not achieved within a given period. This will be achieved through a code that makes sure that shareholders can vote on the advancement of the Blockchain venture after the STO. This code, which will be available on GitHub. In addition, we are publishing our Pre-STO public sale on KICKSTO and ETHEREUM platform. This approach will make raised funds, available for the project upon achievement of specified milestones.

"Want to change the world? Upset the status quo? This takes more than run-of-the-mill relationships. You need to make people dream the same dream that you do."
Guy Kawasaki