TIDOS Whitepaper

"New to the World but Powerful"

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Executive Summary

Technology has been pivotal to changing how we live and interact with each other. Remarkably, the advent of the internet has changed and improved our lives. People can now communicate easily all thanks to the power of the internet more so, social media. Even businesses are turning to social media to boost or establish an e-commerce strategy. The last decade, blockchain and distributed ledger technology is doing to the world of finance what the internet did to early forms of communication. Satoshi Nakamoto introduced Bitcoin in 2008 and now the world is abuzz with various income opportunities available to human kind leveraging this fast-growing digital asset. As all this is happening, application of blockchain technology does not end with its use in the world of finance and banking. A lot can be done with this relatively new technology to advance and solve different industry challenges. Tidos is applying blockchain and smart contract technologies to three different industries that we feel are lagging or not delivering value to end user because of the trust-based system that is already existing. Tidos is a new platform in the blockchain and cryptocurrency space but will be powerful with its solution to the medical, travel and engineering industry. We are building a decentralized platform connecting suppliers of services and products drawn from all over the world to a massive market of customers and resllers.

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1.0 Introduction

Over the last two decades technology has revolutionized our daily lives. The present digital systems for example, phones, computers, and tablets have undergone immense evolution over time. Modern technology features multifunctional devices such as smartphone, smart refrigerator and smart watch. Eventually, this technological revolution has made our lives faster, better, easier, and more fun. It is possible to argue that the impact of technology change has been best applied in the business world where entrepreneurs are always innovating to develop solutions to improve our daily life. There are different areas or industries that continues to greatly benefit from technology advancement. For instance, the medical field has witnessed impressive technology improvements leading to better quality of life. For example, technology is at the centre of discovering new solutions in global medicine with the objective of providing patients with expert, compassionate and expert medical care. From the early days of X-ray machine invention to 3D printing technology that has made it easy to diagnose what's happening inside patient bodies without necessarily performing physical surgery [1]. Other significant areas where breakthrough has been experienced in the world of medicine include data collection, research, medical devices and treatment. However, even with this tremendous improvement in health care aided by advances in technology a lot still needs to be done to further achieve efficiency in the medical industry. For instance, electronic health records (EHRs) is a major area that has remained unchanged over the years despite advancement in technology in the medical industry. Available IT systems to store patient data are centralized often with scattered data trails. This not only locks patients out of control to own and be in charge of own critical health data but also affects efficiency of medical personnel. For example, medical personnel struggle with HER has shown to affect their productivity with physical burnout affecting ability of more than 50 percent of practicing doctors be efficient in their jobs[2]. Other notable challenges in the world of medicine include misreporting and results manipulation during clinical trials.

[1] https://www.geospatialworld.net/blogs/how-technology-has-changed-the-world-of-medicine/
[2] https://cloudtweaks.com/2018/10/blockchain-solving-healthcare-problems/

Another area of our life that is rapidly changing with evolution of technology is the travel industry. Travelling is fun for some while it's cumbersome for others especially those who love the trouble that comes with planning a trip. However, with the advent of technology travelling is turning out to be easier, convenient and fun. Individuals who find it hectic to plan trips with a computer and internet connection can find all information they need online and plan for that perfect trip[3]. What's more, several aggregation resources are available in the travel industry aiding fast decision making for travellers. Internet has in a great way improved how we travel including easy booking which is essential to saving time, during planning of the trip, checking-in and out of destination of choice.

Even though the travel industry is the second fastest growing sector globally after manufacturing it is still faced with numerous challenges despite technology adoption. The industry is full of third parties right from planning a trip to arrival to the desired destination[4]. These third parties affect the experience of ender users (travellers) because one has to ensure huge costs often caused by the many industry players to overbooking and delay issues. Hence, necessitating introduction of innovative solutions beyond what's available in the industry presently for the travel industry to continue with projected growth going forward.

Finally, it is important to be cognizant that the world is changing very fast with phenomenal global trends evident in the engineering and construction industries. For example, the demand for housing is growing rapidly with a global population moving to urban areas rising by at least 200,000 people per day. All these people need decent and affordable housing piling pressure on the need to build more houses as well as other services such as rent and or property purchase. Noteworthy, despite this rising demand facing engineering industry, it is a sector that has been resistant to change, hence little technology disruption is apparent in this field. Stakeholders have to endure a fragmented supply chain with massive data loss evident for instance during the transfer of a property from a contractor and property owner. Therefore, with the right solution designed with an understanding of present scenario within the engineering field presents a huge market opportunity for both investors and businesses.

[3] https://www.traveldailymedia.com/how-technology-has-changed-the-way-you-travel/

[4] https://medium.com/@foiniocommunitiy/blockchain-and-cryptocurrency-in-travel-industry-what-are-the-benefits-and-perspectives-92b76fd4cfa8

Hence, Tidos is an online smart contract-based platform designed to solve operational and transactional challenges apparent in medical, travel and engineering industry. Our fundamental paradigm shift is the ability to apply decentralized ledger technology and build the next generation platform connecting suppliers from the three industries with the massive market of customers all over the world. The platform will be powered by Tidos (TDO) token which will have numerous utilities considering the several touch points we have all three sectors.

Problem Identification

Every company has a focus to remain sustainable while increasing its revenue and maximizing value. Achieving this requires a business to build relationships with other stakeholders within its ecosystem while completing business transactions. This is the case for every industry as long as interested parties want to derive maximum value from each engagement. Businesses want to be profitable, investors realize more returns and end users have value for their money spent on acquiring a product or service.

Medical Industry

The COVID-19 pandemic revealed how bad the state of our healthcare system is globally, even with developed countries where people felt safe and could access medical and healthcare services with ease. All this is happening with some countries are spending huge budgets on healthcare with minimal return on investment. For instance, the US spends at least 17 percent of its GDP on health and medical care costs[5]. This only contributes to a rising costs crisis in the US health care industry. Analysis during the COVID-19 pandemic revealed the US had fewer number of hospital beds and practising physicians per capita compared to other countries spending huge budgets on health care. An evaluation of the present scenario not just in the US but globally reveals certain challenges leading to gaps and disparities in access to health care.

Data Management Problem

Medical error comes third after cancer and heart disease as a leading cause of death in the United States of America. Handling of Electronic Health Records (EHRs) and available IT systems are not effective enough with most of these systems lacking capacity to share patient data across different health care facilities. Patients visit different hospital facilities in their lifetime and this leads to scattering of their medical data across different organizations which contributes to loss of crucial historical data of an individual. The situation is even worse in instances where an individual move to a different country and has no access to past personal medical data. What's more,

[5] https://hbr.org/2011/09/how-to-solve-the-cost-crisis-in-health-care

different medical entities have their own data silos and different approaches to managing of patient data and it's not possible to share the information across other organizations. Patient information is costly and cumbersome to process often the intended flow of this medical data undergoes stifling. Eventually, this creates a higher risk of medical error in the health care industry and even leads to fatalities.

Drug Supply Chain Integrity

The World Health Organization (WHO) posit that 1 in every 10 medical products especially those in circulation in low and middle-income nations is either fake or substandard. Among the fake medical products include vaccines, diagnostic kits and pills. Normally, the counterfeit drug problem is exacerbated industry shortages leading to an opportunity for criminals to develop counterfeit drugs in the market. Further, WHO notes that at least 69,000 people die due to malaria and 72,000 children die of pneumonia after consumption of substandard or fake drugs[6]. The WHO report further found out that at least 10.5 percent of drugs circulating in low- and middle-income nations fail to correct or achieve desired result[7].

The pharmaceutical industry is highly fragmented with main components with each having different actors as follows. There is the manufacturing component that comprise of raw materials and pharmaceuticals. Other segments include the distribution centres, retail outlets which are pharmacies and hospitals with the final component made of patients[8]. Ensuring smooth operation in such an ecosystem is almost impossible due different party interests which results in conflicting purposes not forgetting other several troublesome limitations. Ultimately, the pharmaceutical industry is an example of how it's difficult to achieve clear visibility in the medical industry supply chain. The lack of supply integrity has created a global problem with fake drugs growing at unprecedented rate. In the US alone existence of counterfeit drug is costing pharmaceutical business more than 200 billion in revenue[9].

[6] https://www.npr.org/sections/goatsandsoda/2017/11/29/567229552/bad-drugs-are-a-major-global-problem-who-reports
[7] ibid
[8] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6706717/
[9] https://getreferralmd.com/2018/10/5-ways-blockchain-can-transform-healthcare/

Existence of Fraud and Poor Claims and Bill Management Systems

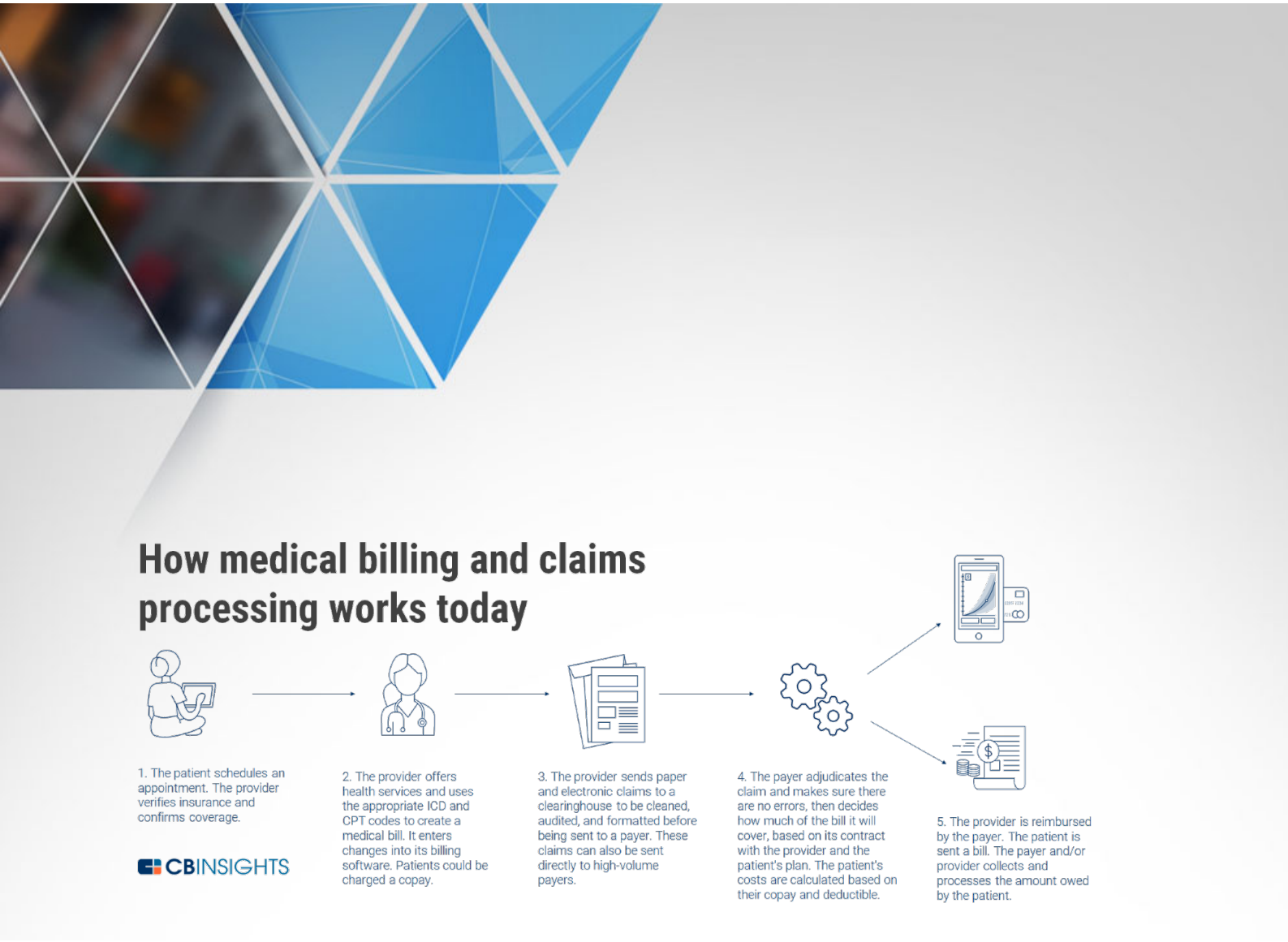
The federal government in the US in 2014 recovered $5.7 billion from health care related fraudulent cases. In fact, between 5 and 10 percent of the total health care costs are fraudulent. Another $30 million is lost in losses each year due and it relates to Medicare fraud accounts[10]. In 2020, false and fraudulent claims rose to $6 billion with the US Department of Justice charging at least 300 individuals connected to healthcare fraud, abuse schemes and waste of public money[11]. This was the largest suit action in entire department's history. Part of the reason leading to the proliferation of these fraudulent activities are on the rise relates to manual claims processing. Even in instances, where health care facilities are using IT systems the servers are centralized hence prone to breaking down. An approximate 40 percent of payer's provider data as well is known to contain missing information or errors[12].

A lot of health care entities are using back-end systems that are complex, slow, hence expensive in terms of wasting funds and time. Insurance and billing related expenses in the US alone are an equivalent of 18 percent of the entire nation's health care expenditure. Notwithstanding that a lot of billing and claims practices have patients wait for more than 3 business days from an insurer against cover on drugs.

[10] Ibid

[11] https://revcycleintelligence.com/news/top-healthcare-fraud-takedowns-of-2020

[12] https://getreferralmd.com/2018/10/5-ways-blockchain-can-transform-healthcare/



Source: CBINSIGHTS

Flawed Medical Research

Clinical trials have always attracted attention from scholars who feel a lot of medical research available is not sufficient. Including clinical trials related to the on-going COVID-19 pandemic available investigation conducted by a team of researchers from the Johns Hopkins Bloomberg School of Public Health found inconsistencies in the conducted medical research. Out of 201 clinical trials conducted, this team found out that 33.3 percent of the trials did not have the necessary clinical end-points which should be well defined during the carrying out of the medical research. Another revelation from the study revealed patient recruitment procedures were not fully adhered to leading to significant design weaknesses. The above COVID-19 clinical trial challenges are just a tip of the iceberg. Another research carried out by the WHO in 2017 found out more than 50 percent of clinical trials either go unreported or experts

neglect achieved results[13]. Consequently, this has led to creation of knowledge gaps in medical research and it's risky as jeopardizes patient safety when practicing doctors rely on inconclusive medical evidence or ignore it completely. Challenges in medical research starts with the procedures applied in recruiting patients, recording of data and its future management. Therefore, there is a need to design a solution that is independent of decisions of actors in the medical industry. However, most importantly, the solution should be patient centric.

[13] https://www.who.int/news/item/18-05-2017-major-research-funders-and-international-ngos-to-implement-who-standards-on-reporting-clinical-trial-results

Travel Industry

The internet has changed the way we travel and helped the world shift from the brick and mortar travel models. Prior to the emergence of the internet travellers used to contact travel agents and enquire almost everything about the trip. It involved engaging travel agents in identifying available flights or other modes of transport, cumbersome experience of rummaging through catalogues to choose a hotel or apartment to stay. However, with the advent of the internet information significant to planning ones' trip is readily available and with a few clicks across different travel aggregator websites one can plan a trip with utmost ease.

Even though the travel industry has undergone tremendous changes after the internet revolution, a lot still needs to be improved to suit interests of all industry stakeholders. Undoubtedly, the industry is highly segmented, centralized and supplier centric.

Poor Management of Personal Identifying Information

Despite technology disruption in the travel industry, travellers still have to ensure carrying different paper identity documents. The situation is different if one is travelling abroad because one has to carry a nation identity card or passport in order to purchase a flight ticket, place hotel reservation and during check-in. COVID-19 has made the experience gruesome because travellers have to apply for COVID-19 free certificate and show it to terminal authorities at every travelling start and end point. Further, the process of authenticating personal information is repeatedly conducted by different stakeholders who most of the time are using third party service providers. Service providers often have poor system to safeguard a traveller's personal identifiable information (PII) from data leaks which exposes owners of the information to threats like data loss or even hacks. A breach against personal identifiable information attracts heavy punitive measures from different state regulators. A data breach affecting the British Airways in 2018 had the airline pay a huge fine totally £183 million14. Evidently, it is not only a loss to individual victims of data hacks but poor systems of managing PII is turning out to be costly to travel businesses. Not forgetting this is not just case of financial loss but affected businesses too suffer reputation damage.

[14] https://securityboulevard.com/2020/03/data-privacy-and-security-in-the-travel-industry/

Huge Fees

The travel industry is full of intermediaries who act third parties who act as a solution to the industry's monopolistic nature, but evidence shows this ends up pushing the cost to travel. For instance, existence of online travel agencies (OTA) intention was to facilitate easy booking and avail necessary information to travellers. Competition employed by OTAs has led to hotels to rely heavily on the agencies[15]. Hotels rely on OTAs to drive up their online sales as well as help with clearing unsold inventory. This has shifted a lot of bargaining power to OTA since they are the intermediary between hotels and consumers. More so, OTAs serve multiple hotels while charging the hotels commissions for every service rendered. On the other hand, hotels have to offset business costs by increasing their products and services price. Presence of intermediaries in the travel industry contributes to high cost even with businesses trying to solve the fee problem. Platform businesses such as Airbnb offer to connect buyers and sellers, however, they end up charging hefty fees. Individuals using these platforms end up paying between 14 and 20 percent an indication of hefty commissions charged by businesses attempting to solve a problem apparent in an industry[16].

Centralized Systems

Major friction points in the travel industry lies in its centralized supply chain. Every service provider in the travel industry maintains own and different database. Eventually, making it difficult for the parties involved to collaborate. Each company has to spend huge amount and waste time in developing these databases. For example, if a hotel wants to connect to Expedia, they will have to hire API and application developers who will spend several months (some times more than 5 months) to connect a single system and which is readily available in the industry already[17]. Moreover, data available in the industry is inaccessible to interested parties and usually stored in

[15] https://blockchain.oodles.io/blog/travel-tourism-blockchain-applications/
[16] https://medium.com/siesta-cloud/5-main-challenges-of-the-travel-industry-and-its-innovative-solutions-617d263f34c
[17] https://medium.com/siesta-cloud/5-main-challenges-of-the-travel-industry-and-its-innovative-solutions-617d263f34c

individual entity centralized servers. If another party requires access to such data for instance, hotels require some data about customer patterns and behaviour, they have to pay some fees charged by OTAs in order to gain access.

Payment Challenges

Several challenges are imminent in the travel industry and it does not only affect travellers but also businesses. Consumers are often left frustrated and victims of drip pricing a strategy employed by online retailers to drive up their sales by using headline price and leaving out any additional fees during initial steps of a purchase process. Additional card surcharges or hidden cost is common practice when shopping online and the travellers are not exempt to such dubious transactions.

Fraud tickets is popular within the travel industry. For instance, the airline industry across the European Union loses $1.3 billion USD per year due to transaction related to buying of online fraudulent tickets. Additionally, available consumer protection systems and legislation worldwide only focus on travellers and no other parties such as OTAs. In fact, agents have to wait for long periods to receive funds. Finally, international travel business is hindered by complex international payment systems and procedures. International payments attract cost and regulatory challenges not forgetting factors such as volatile forex rates, delays in settlement times, fraud risks and huge fees[18].

[18] https://www.pymnts.com/news/payment-methods/2017/top-five-payments-challenges-for-online-travel-agents-and-how-to-overcome/

Engineering and Construction

The physical assets world involving items such as buildings, infrastructure and industrial sites is quite complex. Development of these assets requires a lot of planning usually carried out in phases starting from short term plans, medium- and long-term plans. Construction and engineering projects will always kick off with the definition phase, jump into master planning, pre-feasibility stage, feasibility processes, engineering phase, actual construction, commissioning and the last phase being operational. Evidently, all these phases require an interaction of different stakeholders all through a project's lifecycle. Even though, it may seem to necessitate an interconnection between the different parties, in real life, it is difficult to establish the connection and align every party decision making process to align with each other. Notwithstanding, the industry has been sluggish to adopting new technologies that otherwise would solve apparent sector challenges.

Complex and Inefficient Supply Chain

The engineering industry adopts the project-based model of supply chain with activities scattered across numerous and different location notwithstanding the need to be accurate in the production of complex and extensive assets. This is notwithstanding the need to have all specialists, machinery, labour, materials, components and sub-elements centrally located at a construction site of a project. Hence, the scattering of all these elements create long and dynamic supply chain that requires coordination to deliver expected output. Eventually, this networked structure leads to many issues in the supply chain including payment delays.

A report by CII found out that at least 40 percent of engineering projects dragging or substandard completion cost of capital and finance charges were the leading factors. Cash flow is a major challenge experienced in the industry hence leading contractors to pursue temporary solutions in an attempt to finish a project. A lot of time is wasted in the adopted paper-based approach in the engineering industry often contributing to driving up the finance charges.

Lack of Trust

Considering the dynamic and complex supply chain apparent in the engineering and construction industry trust should be a leading factor guiding the interaction between different stakeholders. However, trust is the first pain point characterizing the relationship between the different players in this sector. In fact, distrust bolstered by gaps in technological solutions, disparate work cultures and disconnected legal procedures has led over the years for stakeholders to depend on paper-based strategy to complete transactions and guide execution of projects. Even today, whenever disputes arise a lot of blame game is experienced as there is no single source of truth among the different parties engaged in a transaction[19]. The lack of trust is also apparent even after project completion especially with asset management, letting or leasing. Hence, being a capital-intensive industry, it is paramount all actors in the supply chain collaborate, use trust-less systems in order for investors to realize worthy return on investment while taking care of external interests of other stakeholders.

[19] https://www.curt.org/how-smart-contracts-are-reducing-inefficiencies-in-construction/

Industry Overview

Medical Industry

In 2018, the global health industry had a total value of $8.45 trillion with an expectation it will reach $10 trillion by the end of 2022. A lot of developed nations spend more than 10 percent of their GDP in national health care expenditure with the US leading at 17.8 percent and Canada at 11.5 percent[20]. Technology innovation if applied well within the medical industry will generate revenues to companies with interest of about $100 billion per year. Precisely, these are revenues or costs saved within the industry for solving clinical and operational inefficiencies[21].

Research conducted by PolicyAdvice.net revealed that technology has a place to solving a lot of inefficiencies currently experienced in the medical and health care industry. More than half of surveyed doctors (66%) expressed that technologies such as IoT and blockchain would be significant to reducing costs met by patients and bolster overall industry specialist's productivity[22]. An additional poll involving patients, 74 percent of those who took part in the study expressed willingness to share information with doctors more so digitally about their lifestyle which would assist doctors in treating them more effectively.

Overall, companies and entrepreneurs focussed on innovating and introducing technology solutions in the medical and health care industry are poised for huge returns. More so, with the advent of COVID-19 which has led to appreciation of digital solutions more growth is likely to witnessed in the areas of remote health care services and technological innovations. For instance, 94 percent of health facilities in the US are in search of appropriate technology solutions that will help with the adoption of electronic health records (EHRs).

[20] https://www.cihi.ca/en/health-spending#:~:text=In%202019%2C%20total%20health%20expenditure,gross%20domestic%20product%20(GDP).
[21] https://policyadvice.net/insurance/insights/healthcare-statistics/
[22] Ibid

Travel Industry

2020 changed our lives completely marked by global lockdowns that imposed restrictions on movements both within and outside countries. Worst hit by these counter COVID-19 measures was the travel industry with at least 55 percent in turnover loss with some countries like Germany recording 80 percent slump in travel and tourism revenue[23]. All is not lost though as 2021 economies are showing signs of recovery, our roads, sea and skies are open and all over again normalcy is kicking in.

Industry experts postulate travel market size will grow from 1.09 trillion USD reported in 2020 to 1.3 trillion (USD) in 2021[24]. Further, global travel technology market will have a steady rise between 2020 and 2027 recording a CAGR of 6.8 to 7 percent over the forecasted period. In 2020 alone despite the pandemic the travel technology market size was 6 billion USD and in 2027 as per industry analysts this will reach 13.6 billion USD[25]. Technology and digitization of systems plus operations in the global travel industry is going to be fundamental driver of this expected growth.

In another report by the World Economic Forum- Digital Transformation Initiative (DTI), states that implementation of digital systems and innovation in travel, aviation and tourism sectors will generate profits of at least 305 billion USD. The study further reveals a paradigm shift will be apparent in the industry with massive shift from conventional businesses to new digital age solutions. Eventually, this will witness a movement of 100 billion USD of value from traditional businesses to digital innovative solutions. Consumers are also to benefit from this digitization of the travel industry, and will be the biggest winners by accruing benefits valued at 700 billion USD[26].

The whole idea of travelling is about creating experiences, connecting with people and places. Hence, technology will play a huge part for the industry going forward with users demanding convenience in booking of hotels and places to stay, travelling experience and of course payment modes.

Recovery from the COVID-19 pandemic has people in search of garnering the best experiences, at reduced costs and with little or no inefficiencies. One area that has

[23] https://ftnnews.com/tours/41068-itb-sees-global-travel-and-tourism-market-recovery-by-2023
[24] https://www.statista.com/statistics/1220218/tourism-industry-market-size-global/
[25] https://www.globenewswire.com/news-release/2021/07/28/2270326/0/en/Global-Travel-Technologies-Market-to-Reach-13-6-Billion-by-2027.html
[26] http://www.bbc.com/storyworks/travel/the-new-tourism-trend/technology-redefine-tourism-industry

picked interest in the travel industry is the use of cryptocurrencies, and new consumption patterns for travel services. For instance, data from Visa Inc illustrates consumers spent at least 1 billion USD on the network paying using cryptocurrencies and this was over the first half of 2021[27]. There are more than 300 million holders of cryptocurrencies and shopping including is going to witness increased use of digital assets. A survey by Travala.com polling 1000 Americans reveals that 71 percent of the participants are willing to spend more traveling experiences compared to the pre-Covid period. A quarter of these respondents affirmed their wish to pay for travel using cryptocurrencies. Use of cryptocurrencies in the travel industry is growing each day with companies with innovative products earning more 1 million USD per week with at least 70 percent of transactions made in cryptocurrencies[28]. Therefore, moving forward technology will be an integral element in shaping success of the travel industry as long as it reduces costs from operations and gain efficiencies.

[27] https://www.technowize.com/cryptocurrencies-find-favor-in-the-travel-industry/
[28] https://www.phocuswire.com/role-of-cryptocurrency-in-travel-recovery

Engineering Industry

The engineering and construction industry have shown immense resilience over the last one and half decade. In fact, the first quarter of 2020 was an impressive year for the industry with the sector adding at least 900 billion USD to the American economy marking the highest level post the 2008 recession[29]. Advent of COVID-19 pandemic had the industry similar to the other sector hit by the global scourge. In fact, companies operating in the retail and hospitality sector were worst hit owing to the containment measures. Worse still being an industry reluctant to implement technological innovations the pandemic exposed most companies to massive losses after everything went to a halt. Even though COVID-19 happened in the year 2020, a lot is happening to ensure the industry recovers post the pandemic. Lessons drawn from the 2008 recession offer the best guidance for engineering and construction. Further, the industry is showing an appreciation of innovations with sudden use of connected technologies key to reducing operational inefficiencies[30]. Players in the industry are appreciating new business models, digital differentiation and an increase in industry collaboration including mergers and acquisitions.

In light of these developments, the global construction industry can only have a positive growth. Industry analysis reveal between 2021 and 2023 the sector will expand at a CAGR of 7.5 percent with a market size of 15 trillion USD by the end of forecasted period[31]. Key to this growth apart from use of connected technologies is the use of real time data which will be essential to ensuring stakeholders collaborate efficiently and improve productivity.

[29] https://www2.deloitte.com/us/en/pages/energy-and-resources/articles/engineering-and-construction-industry-trends.html
[30] Ibid
[31] https://www.globenewswire.com/news-release/2021/03/04/2187407/0/en/Global-Construction-Market-Trends-2021-Include-Use-Of-Autonomous-Construction-Vehicles-Digital-Technologies-To-Improve-Construction-Safety-And-More.html

Our Solution

We are introducing a new product to the blockchain and cryptocurrency industry and it will be powerful to the world. TIDOS is an online smart contract-based platform creating a decentralized database of network built on Binance Smart Chain (BSC). The platform is built with the intention of enabling easy access of services and products across three distinct industries namely medical, travel and engineering sectors. Therefore, it is a decentralized platform targeting to connect suppliers of services and goods with a global customer base. We feel and with market research as carried out in each sector and as illustrated above there is a cause to believe harnessing collaborative efforts in each sector will bring change to the world.

Why Binance Smart Chain

Binance Smart Chain (BSC) is a parallel blockchain network to Binance's initial Binance Chain (BC) built with additional ability to run smart contract applications. The design of BSC allows it extend positive attribute of the native Binance Chain which allowing high transaction capability and then with BSC with smart contract functionality.

The introduction of BSC by Binance was to allow developers to design and build decentralized applications (DApps) just like TIDOS and use the platform to manage digital assets cross chain while taking advantage of large capacity and low latency available on the blockchain infrastructure. Lack of blockchain interoperability was threatening successful implementation and designing of solutions especially with high fees experienced on other blockchain networks such as Ethereum.

A fundamental attribute leading to Binance Smart Chain early success in 2021 is the fact that BSC supports Ethereum Virtual Machine (EVM) hence it can run applications like MetaMask which are Ethereum based applications[32]. Therefore, BSC being an Ethereum compatible blockchain means it establishes a mutual relationship with other blockchains allowing developers migrate or develop DApps, ecosystem elements and other tools with ease signifying a win for the crypto and blockchain industry.

[32] https://coinmarketcap.com/alexandria/article/what-is-binance-smart-chain

Further developing DApps on Binance Smart Chain allows developers to leverage industry's fastest growing sector (decentralized finance) because BSC supports staking and other community governance-based systems. The protocols decision to run on proof of stake consensus algorithm (PoS) facilitates faster processing of transactions unlike the scenario with other networks that run on proof of work (PoW) consensus models[33].

Therefore, our decision to build TIDOS on Binance Smart Chain will be beneficial to our platform users because they will leverage speed in transaction and at low cost in terms of fees. As well it enables TIDOS to integrate other features such oracles which are essential to fetching real world data and influence our offering most value to our ecosystem.

TIDOS Platform

Our platform is open to use by stakeholders in all 3 segments identified earlier in this document namely medical, travel and engineering. Of course, we are open to expanding this ecosystem as will be outlined in our utility case in the last section of the whitepaper.

[33] Ibid

Our Ecosystem

TIDOS primarily serves three sectors and stakeholders will be drawn from the following fields:

Medical	Travel	Engineering

Elements of Focus

The following will be the core components of our platform and in most cases our solution is built with an understanding that each of the discussed sector requires a trustless solution to root out inefficiencies, reduce costs and improve accessibility.

1. Identity

   A common feature present in all the three identified sectors is the fragmented nature of each industry which makes difficult to secure systems and improve accessibility of services and products offered. Therefore, at the forefront of our platform is the creation of a digital identity for every individual or entity participating in our ecosystem. The e-identity will be cryptographically secured with both private and public keys to allow users to access services and products offered on the platform. Hence, the e-identity will help users proof identity when accessing medical services (including giving or denying consent to use of medical data), when travelling and one is accessing services or products listed by partners on TIDOS ecosystem. Finally, contractors, property owners and government agencies will use the e-identity in the development and management engineering projects.

2. Data

   Data management is an important in every system and securing it away from manipulation is key to achieving optimal decision making for individuals and organizations. Therefore, TIDOS will use smart contract to manage, share and store data on the Binance Smart Chain. For instance, in the case of medical industry a patient does not need to fill out many forms which are later stored by a health care facility either physically or in a central server. Storing patient data on a blockchain network means it's easily available at the request of any interested user and one will only require to seek consent from data owner something that is currently missing traditional medical care systems.

Additionally, TIDOS smart contract system will aid in the management and tracking of drugs to counter use of fake medicine in the treatment of patients. This will be possible through tracking each drug ingredient all through its lifecycle through partnership with verified drugs manufacturers. For instance, at every stage of drug distribution information such as geographic data will be tracked, registered and recorded on our blockchain platform.

Additionally, with the travel industry, all traveller's data is securely stored on our distributed ledger. Integration of oracles sourced from Chainlink which is already supported by Binance Smart Chain will allow us to fetch real time data such as price of different tourism destination and this is fed directly onto our blockchain. Similarly, data management is also crucial in the engineering industry. Finally, smart contract will be important to managing and safely storing construction industry for example, type of materials used in the construction process, names and qualification of contractors and specialists used. In most instances, this data is lost in the construction industry with no reference point in future especially once a project is finished and handed over to the owner.

3. Transactions

   Decentralization of transactions will be essential to achieve security, monitoring and reduced cost as TIDOS will eliminate the role of intermediaries and ensure there is no single point of failure exists. All participants in our ecosystem will interact with each other directly and with pre-determined conditions running on smart contracts.

4. Payments

   Our ecosystem will be powered by Tidos Token a native cryptocurrency with numerous utilities on our platform for both inter and intra network payments. Primarily the token will be used to access services listed on the platform and payment of transaction fees. The decision to launch our own cryptocurrency is informed by the fact it allows us to solve challenges experienced in the industry such as payment delays, huge cost of transaction and interoperability across the three different sectors. For instance, a patient accessing our medical solution will pay in Tidos token, gain some cash back or discounts incentives, (of even up to 40 percent on the next service) leverage data used and posted on the platform when accessing other services from other sectors for instance, when travelling.

Medical TIDOS Solution

The first application of smart contract TIDOS platform targeted at the medical and healthcare field. Our TIDOS solution will be a platform connecting doctors who must for apply for enlisting on our platform from all over the world and patients. Such that a patient can login into our service and opt for an online consultation or walk-in to the nearest health care facility having booked an appointment via our platform. All medical profession specialists on TIDOS and facilities are vetted prior enlisting with the platform and this information is available on each profile for verification by users. Transactions and operations on the platform are under the control of smart contract which is essential to helping us reduce cost of extending medical care services to all without a focus on systems but on patients. Further, patients using our medical platform will make payments using our native crypto Tidos token.

The platform gives patients control over their data and can opt to have their medical history used for research purposes and in return participating users earn some income paid in the form of Tidos token. If a user is not comfortable his or her being used as such there is the option of opting out via a feature available in the application.

In the event one changes a health care facility, they still have access to their medical history and they can share this information with medical personnel in the new facility. This will be important to reduce medical errors and allow doctors to offer the best services.

Features of TIDOS Care

a. Global Telehealth Marketplace- a digital marketplace by TIDOS connecting patients and medical doctors globally.
b. Tidos Vault- a storage system for patient data that is secure and managed access functions.
c. Tidos Wallet- a customized medical care interface with individual profile information, access to a personal digital assets' wallet used to store Tidos token and other supported cryptocurrencies to be introduced in future.
d. Android and iOS Support- an application accessible via both android and iOS operating system with the option to roll out a web-based system in future.
e. Online conferences
f. Reminders- use this feature to set your next appointment and prescription reminder

g. In-app map to guide you to the nearest health care facility
h. Language translation support

Travel Solution

Ours is solution based on a distributed database hosted on Binance Smart Chain hence no party in a transaction can influence an outcome and our platform no single point of failure. Travellers, hotels, and property owners across the world will be able view all transactions on the blockchain hence allowing us to create a trust-less ecosystem. Further, by use of oracles possible with the compatibility between BSC and Chainlink, it will be easy for us to verify prices of different tourism destination through a comparison and analysis of the industry. This way we allow our platform to have a transparent system where hotels and other property owners can't set unfair prices to the disadvantage of travellers. The oracles will also be beneficial in verifying and fetching different airline ticket prices and help circumvent the biased algorithms that fluctuate ticket prices when an individual is in the process of booking. Further, using our app users will not need to carry all the required travel documents as all this has been digitized and stored on the application in the form of a digital identity. Finally, our platform is free to use for travellers, however, businesses enlisting on the platform will pay a relatively cheap fee.

Features of Tidos Travel

a. Instant Payments- we leverage the use of our cryptocurrency (Tidos token) to allow fast and instant payments between the different parties in a transaction.
b. Transparency- Every participant on Tidos travel platform will be able to view the transactions on the open blockchain.
c. Honesty- you must have come across the "only 2 rooms left" alert while trying to book your next trip. Through the use of blockchain and smart contract technology our platform prides in promoting 100 percent honesty with no room for biased advertisement.
d. Affordable- our members will enjoy the best prices in the industry because of the direct connection between travellers and hotels/property owners and or airlines. This way we will offer competitive prices with some starting at 25 percent below the industry level.
e. Easy Access- our platform is available on both android and iOS devices.

f. Online Conference
g. Language Translator- support of almost all global languages using our translator service.

Engineering Solution

Tidos solution for the construction industry is a peer to peer-based system aimed at facilitating easy collaboration and digitization of engineering and construction sector. We will have a database of verified construction personnel, hence user's login to the platform and search for services available alongside different specialists' profile matches. Upon agreeing between the two parties, they set terms of engagement while still on the platform for instance, project budget, materials to be used, timelines and other necessary document verification processes. All this information is captured and recorded on the Tidos platform and secured by smart contracts for execution. At every stage as per the party's agreement, Tidos will send our program validators who visit the site for inspection and upload all necessary evidence on the system. Upon project completion, the smart contract pays the construction specialist and in return is handed over the project alongside a private key as proof of ownership and contractor information plus all necessary information relating to the construction.

Features Tidos Construction

a. Supply Chain Visibility- stakeholders participating on our construction ecosystem can track every phase and activity by different actors. For instance, if a sub-contractor delivers materials for use in construction this is marked as complete, assigned a unique ID with attached evidence and payment released in Tidos token.
b. Transparency- everyone on the platform can verify actions of the other party on the open sourced blockchain.
c. Collaboration- our system allows creation of team board to allow easy collaboration and coordination between the different specialists and property owner. This way everyone can track activities of the other without worry of operating in the dark as it is in the current construction industry set-up.
d. Instant Payments- upon verification of every activity and completion, the smart contract immediately releases payment to the concerned parties.

e. Rating System- we use a rating system against the different construction specialists to encourage high level of standards in service delivery to project owners. This is openly visible and stored on the blockchain to avoid fake reviews and alterations.

f. Online conferences tool- this will foster easy coordination among the different industry players.
g. Language translation tool to accommodate everyone from across the global despite difference in language.

Tidos Construction and NFT

In future we are looking to introduce real estate tokenization using the non-fungible tokens popularly known as NFT approach. This is an interesting adjustment in our product offering allowing investors to buy fractional real estate products via our Tidos marketplace. Project or property owners will apply for real physical asset listing on our marketplace and after verification it is listed for investors to take part in full purchase of the property of interest or just a portion of it. Payments will be made using TDO token giving us an opportunity to expand our utility for the native cryptocurrency.

Property buyers will in return be issued with a unique private key as proof of ownership and aid easy transfer of assets without the usual inconvenience of having to travel physically, engage a lawyer or even other agencies to help with mediation in purchase of real-world assets. In the event, parties need to travel to inspect the property this is captured in our database and using our travel suppliers one is eligible for more discounts.

The advantage of us exploring the NFT strategy with Tidos is that it gives our users an opportunity to further interact with DeFi products. Therefore, Tidos tokens holders can leverage crypto services such as borrowing, staking or lending with great rewards. Further, upon property listing and kicking off of trading activities Tidos through the help of financial analysts will set an annual profit going to property investors who fund different projects requiring funding on the platform.

TIDOS NFT Ecosystem

The main components of Tidos NFT unit under the construction and engineering unit will comprise of the following components:

a. Tidos DeFi Wallet- this is decentralized application wallet allowing token holders to manage and be in 100 percent in control of their digital assets. Tidos only provides the interface to access and manage the assets with the most user-friendly environment. When using this wallet users only pay the respective network fee, however, one should exercise due diligence when transacting because loss of private keys means loss of funds and Tidos cannot help retrieve lost funds in such instances.
b. Tidos Swap- this is a decentralized exchange offered by Tidos allowing our token holders to access and leverage DeFi products such as staking, liquidity provision and yield farming.
c. Tidos Portal- will also have a portal to store property information such as location of real estate asset. It will have some information shared publicly in the spirit of blockchain and decentralization while leaving a provision to allow some information kept private.

How Tidos Platform Works

Tidos platform will have a backend with two interfaces namely the supplier and customer side. Smart contracts will of course be used in connecting and facilizing transactions between the two parties such that even us cannot alter or influence pre-set conditions between the users. Suppliers for example, medical doctors or construction specialists will fill in the required information on the platform to aid search results on the consumer end to yield favourable results and inform purchasing user decision making. For instance, user on the supply side will be required to fill in information such as:

- User name
- Online credentials such as website of company or personal
- Server IP
- Tidos Rank
- Deposit required to kick-start the service offering
- The expected total amount for the entire transaction
- Timeline where appropriate
- Product category

Once all this supplier information is verified by our team of experts their profiles becomes visible on the platform and buyers can choose an appropriate service. Purchasing users need to download our application and register for the individual profile. Therefore, customers will be able to buy any product or service directly from suppliers via our standard API protocol and at no extra cost. All transactions including prices fixed by suppliers are recorded on our blockchain.

Incentive System

Maintaining integrity of our operations and user transactions is an important area of focus for Tidos. Therefore, our platform will have an incentive system (Bitcoin has one to keep off malicious actors, why not Tidos) governed by the community and be good behaviour will be encouraged through rewards with TDO tokens. Out of the total TDO tokens, a 10 percent pool will be created to help us reward users who take part in sharing their feedback about overall service from the suppliers.

The interesting bit of our program is the level of engagement achieved to host a friendly yet professional relationship between the transacting parties. Customers using our platform will receive TDO token from 0.5 to 5 percent equivalent of their transaction as a supplier rating reward and defined by suppliers at the initial agreement. in the event, a customer was happy with service offered by the supplier and he or she becomes a return client, an additional 0.5 to 5 percent as supplier rating reward will be deposited to the customer.

Supplier Rank

Similarly to the incentive mechanism put in place to make sure we gain customer feedback about services or goods offered by suppliers we Tidos implements a supplier rank system. It is a measure implemented by Tidos to influence suppliers to offer the best service to clients using our platform and with each service offered, a supplier gains or loses points on our reliability score.

Our platform gives suppliers the option of buying a certain number of TDO tokens and lock the funds for a stated period. This frozen amount opens access of suppliers to increase their reliability score as each TDO token frozen is equal to 1 reliability score. Noteworthy, suppliers with locked TDO tokens because this acts as a commitment to them offering quality service to customers get preference in the ranking system using our 100 percent transparent algorithm.

Each reliability score is equivalent to 10 successful and undisputed transaction with the number doubling with each transaction represented in TDO tokens.

In the event a customer expresses dissatisfaction with the service offered, the smart contract notifies our system for arbitration. Our team of validators (sourced from the community and each success arbitration this team receives some TDO token reward) engage both parties to verify nature of conflict. In case it is established the fault was on the supplier side, he or she adds negative points on own profile thus reducing reliability score and loses entire amount agreed on the transaction and 25 percent equivalent of total transaction amount is transferred to the buyer from the frozen supplier funds in TDO tokens. Community validators share 15 percent of the total transaction amount in the disputed transaction.

Marketing Strategy

We understand the need for uptake of our platform among target users as well as plan for a successful token offering. Achieving this will require use the following go to market strategies:

1. Official Website- creation of an official company website listing our services and strong USP. This will be complemented by our token sale landing page. Both sites will be optimized and backed by social media strategy.
2. Social Media Marketing- community building is essential to the success of any project. Therefore, even before the start of our Initial Coin Offering (ICO), we intend to ramp up our social media profiles communicating, educating and engaging our target users. More so, push awareness on the need for the use of smart contracts in all 3 sectors.
3. Youtube- Creation video content pushing our brand, conduct interviews with industry experts as well as members of our team.
4. Shows and Exhibitions- participate and organize own shows targeting each of the sectors. This will also include attending other activities organized by players in the industry.
5. Referral Program- activate a referral program where users will earn some Tidos token upon inviting users to try out our platform.
6. Endorsements- identify targeted influencer endorsements both online and offline.
7. Partnerships Campaigns- establish partnerships with each sector leading entities and arrange for mutual relationship where they help us push our brand while we bring them business in return.

Revenue Models

a. Subscriptions- professionals, organizations and businesses listing on the platform will pay a monthly subscription to gain access to the platform services and products.
b. Advertisements- we will add a tool that will allow businesses to sell their products directly to consumers as opposed to use of middle parties to take up this role.
c. Analytics- data generated on our platform is a gold mine, hence with user consent to allow us to monetize their data, it will help us create value for the 3 industries while still gaining market insights. *users who allow us to use their data will be compensated using Tidos token.
d. Token Appreciation- of course finally, our company will reap big from our Tidos token appreciation. We plan to bring more utility to the token and this will create more reward for our token holders alongside well thought tokenomics as illustrated in our token sale section.

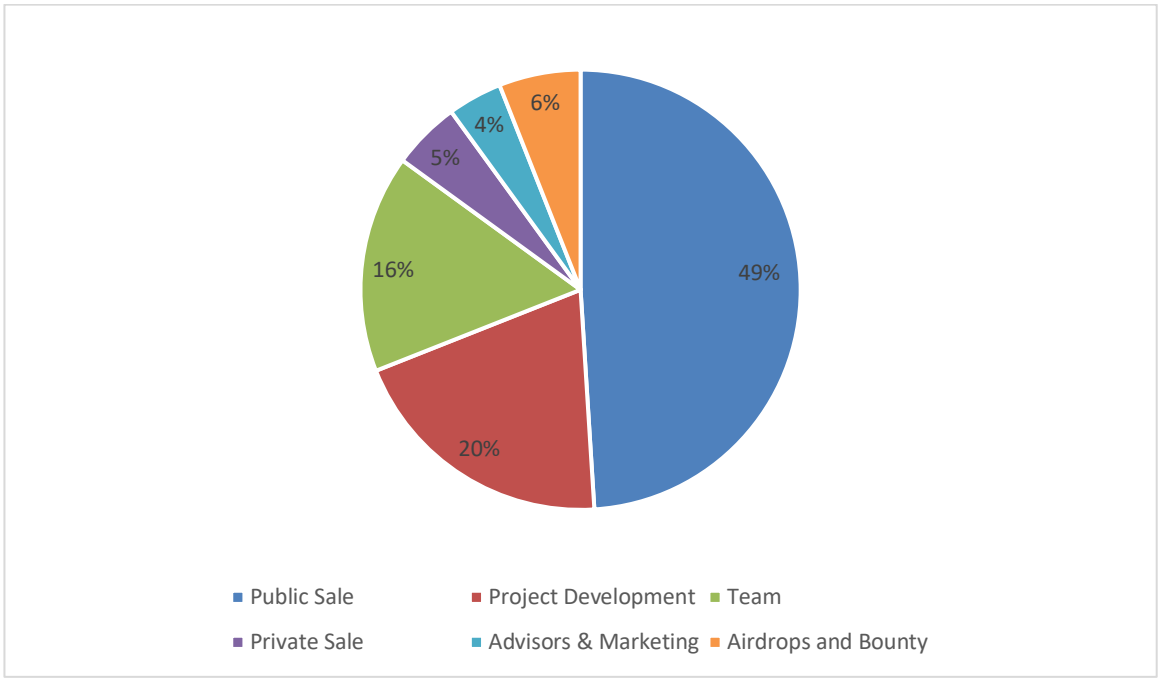
Our Token Sale

We are planning for an Initial Coin Offering (ICO) which will be run from September 7th 2021 to the 21st of the same month. Our token sale will allow us to use funds raised from crowdfunding to develop and operationalize the platform as described in this document as well as per the roadmap. Understanding the need for our investors to gain maximum return on their investment with us we've capped our total token supply at 9 million Tidos and any unsold or unallocated tokens after ICO will be destroyed with no option of releasing any new tokens in future.

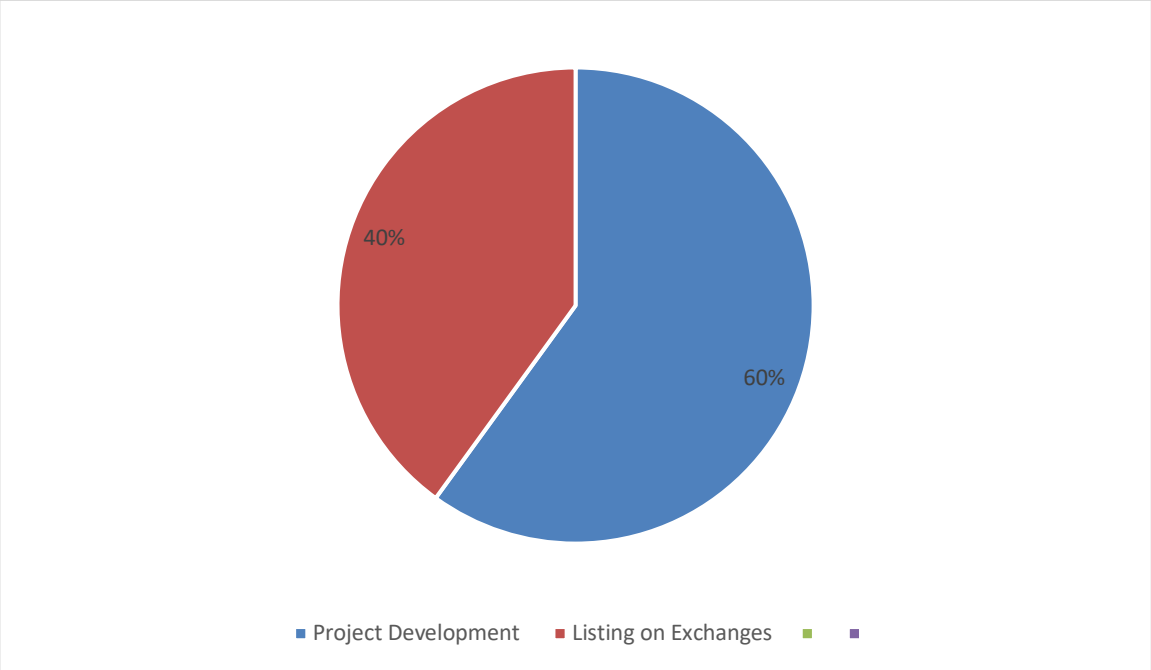
Token Information

Token Name	Tidos Token
Token Symbol	TDO
Blockchain	Binance Smart Chain
Total Supply	9,000,000 Tidos Tokens
Accepted Currencies for ICO	BTC, ETH, and fiat payments
Number of Days for the ICO	14 days

Token Distribution



Use of Funds



Who We Are

Core Team

Fatima Firozi- Blockchain Developer/Blockchain Lead

Tina Moray

More than 15 years of software development.

Yan Zhang

Over 10 years' experience in web and database development.

Asim Malik

Asim is a professional android and iOS developer

Chika Tik

Chika has immense knowledge and experience in web development

Our Advisors

Anders Johnsson

Anders has more than 20 years' experience in wealth fund management.

Roadmap

(Lifted from the website)