Fitcine white paper

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Abstract

Fitcine is a decentralised social,medical impact network built on the **Ethereum blockchain**. helps social organisations (charities, NGOs, social enterprises) to run projects transparently, using smart contract-based incentives to ensure their impact is independently verified and accessible to everyone , **donate to charity in a transparent way and help in the development of the medical field..**

This makes it much easier for funders ,donators, researchers (philanthropic organisations, impact investors, small donors) to identify and scale medicinal projects that demonstrably work, while reducing due diligence, reporting and other transaction costs.

Fitcine's first application is live at www.fitcine.epizy.com . All our code is available in our Github page.

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Summary

Fitcine is a transparent, medical network built on the Ethereum blockchain. It incentivises medicinal organisations,donors to be more transparent about their impact, so that effective projects can raise the funds they need in a transparent way to tackle donations and medicinal problems at scale.

The problem

Charities, NGOs and social enterprises today face a tough funding environment: donations have long been stagnant in the West, and there is no transparency. People who donate do not know where their money goes when they donate to medical research.

This is mainly due to the fact that medical organisations aren't transparent enough about their impact. As a result, donors are losing trust, and have become obsessed with the "wrong kind" of transparency: medical organisations are under massive pressure to cut costs, which has led to money laundering, and shifted the focus away from the much more important issue of delivering real impact.

In parallel, the lack of transparent impact data is problematic for institutional funders (grant-making bodies and impact investors): without it, they can't benchmark medicinal projects and identify those that are the most effective, which leads to unnecessary inefficiencies and exorbitant transaction costs.

Fitcine's solution

Fitcine solves these problems by requiring that all medical projects specify the goals they are trying to achieve and mandates that the achievement of these goals has to be independently verified and validated, Also the donors who contributed to the project are allowed to vote which makes it more reliable . Transparency is enforced by making funding conditional to impact , most documents Open Source: after receiving initial seed financing

with which to start their projects, social organisations only receive additional funds if they can prove that they have achieved their goals.

Core protocols

Fitcine is built on the Ethereum[1] blockchain, and uses smart contracts[2] and tokenisation[3] to power the following functionalities. It is built on Truffle Framework for the timebeing, Ganache and Drizzle for the front end.

- all impact data from the fitcine app, i.e. information about medicinal projects, donations including their assumptions, operational resources and their impact goals, is recorded in a way that is immutable, tamper-proof and publicly accessible.
- all projects have a designated independent "validator", tasked with verifying that the medical organisation has achieved its goals. Validators are selected via a dedicated validation market, and can be humans, machines, or a combination of both.Also donors are given tokens based on their contributions which prevents any misuse of powers
- project track records are publicly accessible, but sensitive information (e.g. the personal data of project beneficiaries), is encrypted and stored off-chain. Smart contracts secure selective disclosure rules that ensure that only authorised people can access this data. This ensures Data Transparency and also Protection at the same time.
- Fitcine's donation protocol is powered by smart escrow contracts that "freeze" funds donated to projects. A part of these funds are then paid in installments to medical organisations each time their project validators confirm that they've achieved a goal.
- Fitcine's impact investment protocol allows social organisations to tap into an alternate source of funding that can be connected to the donation protocol: impact investors in this model provide the working capital for medical organisations to start their projects, and are automatically repaid from the remaining donations collected when projects achieve their goals. Otherwise the funds are terminated leading to saving of money

[1] Ethereum is a public blockchain featuring scripting functionality, which facilitates online contractual agreements (called smart contracts). See Ethereum.org for more information.
[2] Smart contracts are computer protocols, generally built on top of a blockchain, designed to automate actions if certain conditions are met. One example is Fitcine's use of smart contracts to enable the conditional payment of donations when triggered by the instruction of a project validator.
[3] Digital tokens are used to represent different kinds of assets on a blockchain .

Lower transaction costs

Transaction costs are a major barrier to the growth of social sector funding, mainly because of the multi-faceted administrative burdens of impact management. Fitcine helps alleviate this in a number of ways.

Network effects

On Fitcine, impact management is not considered a dispensable or unnecessary overhead cost, rather it is integral to the entire system.
Cost of regular reporting is integrated into the overall project budgets, and incentives are built into the protocols to ensure that social organisations deliver: they are paid for each update report submitted, and punished if they miss deadlines. Obviously, this does not, in itself, reduce impact management costs, but formalising the costs
and imposing regular reporting in this way, combined with the independent validation of project goals, creates a mass of impact data that can be used to reduce the overall cost of impact management across the entire network. The use of blockchain technology, in this respect, is essential, as it allows Fitcine to tokenize impact data into "impact facts" that live on into perpetuity, and are used to produce a number of cost-saving network effects.

Comparison incentives

The ability to benchmark and compare the impact of different projects is key to reducing the cost of identifying and scaling those that are the most effective. Fitcine uses two main mechanisms to incentivise users to establish comparisons between projects, allowing for operational best practice to emerge stigmergically, while eliminating inefficient methodologies and reducing design and project administration costs:

- **Contribution rewards** : Fitcine rewards users for adding value to the impact data provided by the various projects on the network, effectively incentivising the creation of a huge, searchable database of information on any given impact area. Contributions can come in the form of ad hoc information, such as submitting a new empirical research report that reinforces or weakens the assumptions of a given project. Contributions can also provide more macro analytical input by aggregating impact data from a large amount of projects (using machine learning for example): this can be helpful to identify operational patterns that lead to projects succeeding or failing, for example, or identify projects that are achieving a high level of impact at the lowest cost. Users must pay a fee to access these contributions, part of which is sent to the authors.
- **Prediction markets** : as well as making contributions, users can place bets on the likely impact of any operational changes proposed by social organisations in their regular progress reports. This further incentivises correlation between projects, by crowdsourcing expertise.

Automated payment flows & legal structuring

Fitcine uses smart contracts to automate payment flows between all stakeholders participating in the network. This functionality dramatically reduces the administrative burden of financial redistribution, and is particularly helpful when multiple funders and intermediaries are involved in the same project: when a social organisation achieves one of its project goals, for example, it will automatically receive payment from the pot of

escrowed donations made to the project. If any impact investors funded the project, part of these donations are automatically siphoned off to make their interest payments, and if these investments are managed by an intermediary fund, then it automatically receives its management fee from the interest payments. By automating payments, it is important to note that Fitcine also streamlines the legal costs of setting up projects, and of establishing contractual agreements between the different parties involved. Thanks to network effects, the more similar set-ups are launched on the platform, the more they become streamlined and standardised. We expect that the cost savings on complex funding instruments, such as social impact bonds for example, which typically re-invent the contractual wheel for every deal as explained in section II, will be particularly drastic.

Giving back

Fitcine is built in such a way that a portion of the network fees flows back to social organisations in the ecosystem.

Grants DAF

Conditional payments (where social organisations are paid only after they achieve their goals) can be a major barrier for smaller organisations, as they often lack the financial resources and/or the expertise to adequately design, run and raise funds for impact-based programmes, and may not have enough of a track record to inspire the confidence of funders when they first join the network. It is equally problematic when a social organisation - whatever its size - wishes to trial a new and highly innovative solution: because it is by definition untested, finding the seed funding to launch it can be a struggle. Fitcine therefore reserves part of its network fees 70 as a source of grants to fund feasibility studies, design development and/or marketing costs for the launch of promising but untested or under-resourced projects. The allocation of these grants is managed by a decentralised autonomous fund (referred to in this whitepaper as a DAF - which is a similar concept to the better known DAO 71) managed by Fitcine token holders in proportion to their holdings.

Transparency rewards

Sharing impact data is mandatory for social organisations using the platform to run their social projects, so Fitcine has a built-in mechanism to reward them for doing so. If a user wishes to access the data of a specific project (to compare it to another project in the sector, or for due diligence purposes for example) she must pay a fee in proportion to the level of granularity that she wants to obtain, which Fitcine shares with the social organisation that produced the data. This allows social organisations to reap the rewards of their transparency long after their projects are over.

Adapting to "real world" use cases

Here we will briefly mention some of the mechanisms that Fitcine uses to adapt the use of the Ethereum blockchain to real world situations. These fall into two categories: mechanisms that allow projects to evolve, while respecting the immutability and radical transparency of the blockchain, and services that support mainstream users with little to no experience of using the Blockchain.

Governance & obfuscation protocols

The data recorded by the Ethereum blockchain is both immutable and transparent. These qualities form the basic building blocks of the Fitcine platform, but in some cases they can pose a challenge to good project governance, and in others can be dangerous to the beneficiaries of social projects.

Supporting mainstream users

In its current state, using Ethereum still requires a number of skills and precautions that can make it inaccessible for casual users. This is why we have taken a platform approach to allow third party developers to build services that will cater to these users. In a first instance, the Fitcine team has, and will continue to, develop facilitation services of its own. These include:

● A service that allows donors and impact investors to fund projects using fiat currencies (such as British pounds, US dollars, etc.) instead of cryptocurrencies.
● A project designer tool that facilitates the contractual and operational set-up of projects, and automatically creates their smart contracts on Ethereum.
● A concierge service that manages fee payments and hosts Ethereum nodes on behalf of users.

Giving back & Fitcine's coin economy

Fees on the network are paid in native Fitcine coins, and part of these fees is reinvested back into the ecosystem in the form of grants to help medicinal organisations - particularly smaller ones that may otherwise lack the adequate resources or expertise - to launch high quality projects. Grants are managed collectively by Fitcine token holders via a decentralised autonomous fund (DAF).

Fitcine token economy

Interacting with the Fitcine platform requires the use of Fitcine tokens that will be distributed in an upcoming token sale. This section explains how they are used, and the additional benefits they give to holders. Note that it is outside the scope of this whitepaper to provide any information on the modalities of the token sale, which will be communicated separately.