



Time DAO

4TH DIMENSION APPS

- White Paper -

Index	1
Abstract	2
1.Vision	3
1.1 Genesis	
1.2 The missing Public Service	
1.3 What are the Implications? What can you do with it?	4
1.4 Ambition	
2.TimeDAO : enabling 4th dimension apps	5
2.1 The Challenge : Persistence in Time	
2.2 The Solution : TimeDAO	
2.2.1 Mission	
2.2.2 Proposed governance structure	6
2.2.2.1 Time Council special fund	
2.3 SDK & Time Apps	7
2.3.1 The first TimeApp : The Digital Time Capsule Service	
2.3.1.1 NFC Time Capsules	8
2.3.1.2 NFT Time Capsules	
3.\$TDAO Token	9
3.1 Token Sale	10,11
3.2 Token Vesting	12
3.3 Ecosystem Fund	
3.4 DAO Vault	
4.Technical solution	13
4.1 Decentralized Storage Service	
4.2 Website / React App	
4.3 Smartphone App to store and retrieve capsule with NFC	
4.4 Physical Time Capsules	
4.5 NFT Time Capsule	14
5.Tokenomics	15
5.1 Token Utility	
5.2 Incentive Mechanisms	
5.2.1 Airdrops & Liquidity mining program	
5.2.2 Rewards Pool	
6.A community Owned-and-run project	16
7.Business Model & Commercial Strategy	17
8.Project History & Roadmap	18,19

Abstract

It is Christmas 2031, Shawn is playing with the small wooden figure he's been dragging around for ten years now, waiting for this exact moment to arrive.

When he turned 10, his grandfather gave him that object and told him to keep it carefully for it was the key to a treasure, one that would open on Christmas ten years from now. The wait is finally over, he enters the credentials written in the NFC chip embedded in the object and opens his time capsule. Inside he finds pictures, a note from his grandfather, videos and...a crypto wallet. His grandfather didn't lie, there was indeed a treasure waiting...

This short story illustrates what we aim to enable : the emergence of a range of new applications centered around the concept of time-locking, applications like time capsules and time-locked crypto wallets.

For this to happen we'll provide :

1. **A public service dedicated to storing and time-locking digital content** in a trustless and reliable way.
2. **A DAO dedicated to maintaining the service through time.**
3. A **SDK** to facilitate the integration of the service in third party applications and help foment an ecosystem of applications based on time-locking.
4. Efficient & reliable ways to store and transmit your time-locked assets' credentials (NFC physical objects, NFTs).

1. Vision

1.1 Genesis

The idea originally sprang from a basic assumption : “You can’t send files to the future”. Seemed obvious at the time but...Is that true? If I take a file, encrypt it and store it so that nobody can retrieve it before a set date, one could argue that the file *per-se* ceased to exist in this temporality (as it is now unfindable and unreadable). So where is the file? It is already in the future. You are the one lagging behind, when you will catch up with the file’s new temporality it will already be there waiting for you.

Ergo...Yes you can send files to the future. But for this to be more than an abstraction, there is one major challenge : the system must stand the test of time.

The idea was intriguing enough to start thinking...

1.2 The missing public service

There is nothing more common than sending something from one place to another. It is so natural we don’t even think about it. But we were not born with the ability to send messages to remote places : there are public services that give us this possibility. Services like the post office, Internet, cellular networks are the infrastructures that make it possible.

What we can’t do up to now though is “send something through Time”, **precisely because there is no “TimePostOffice”, no public service to easily and reliably store something for the future.**

We believe there should be such a public service, we believe it would be a useful and interesting new feature for people at large. A new possibility that will give rise to a thousand usages.

1.3 What are the implications? What can you do with it?

The impact of technologies is best seen through the applications they enable. Initially we will propose two applications of the technology that we think would be useful :

Send content to the future : The Time Capsule Use case

How people will actually use time capsules is unknown but we believe that, as adoption grows, it will become a standard for parents to create a time capsule for their children's 18th birthday with a message recording the day of their birth along with pictures and eventually the private key of a crypto wallet.

Along the same line, it could become common for lovers or friends to create time capsules to anticipate an important commemoration in the future.

Time capsules, especially NFC time capsules, would also be a perfect medium to send a letter to yourself a decade from now.

Send value (cryptocurrencies/NFTs) to the future : The TimeWallet Use case

TimeWallet allows people to time lock their crypto wallets. It works like a piggy bank : you receive the public key of the wallet so you can add more cryptos as time goes by but you won't be able to access them until a predefined date.

This mechanism can be useful in many cases : as a crypto Trust Fund, as a safeguard against panic sales or as a crypto savings account...

Program events in the metaverse: TimeDAO offers an external time-locking mechanism for decentralized items and Apps by providing the possibility to link time-locked data to any NFT. It opens the existence of features such as a metaverse safe that would open at a chosen date or programming unique events in a decentralized virtual universe.

1.4 Ambition

This project is resolutely human in its essence. Unlike many others in the field today, it is about people and what they will do with the technology. We believe that, if widely adopted, this public service and its applications have the potential to enhance people's lives by presenting them with new possibilities when it comes to sharing, to transmitting, to preserving, to remembering...

Our ambition is to build this public service.

This short whitepaper is about how we intend to do it.

2. TimeDAO: Enabling 4th Dimension Apps

2.1 The Challenge : Persistence in Time

This project poses a very specific inherent challenge: to be of any use it must stand the test of time.

Indeed, what's the point of setting a time capsule for my newborn child's 18th birthday if I am not absolutely sure the company will still exist in 18 years and I can retrieve the data I stored?

Persistence in time is what this project is all about, the service must keep functioning in the future. How to ensure that? Will Ethereum exist 20 years from now ? What will be the technological standards in a decade ? Nobody knows the future, that's why we 'll need to involve human agents in order to anticipate the coming changes. Their action will be coordinated through a DAO: TimeDAO.

2.2 The Solution : TimeDAO

2.2.1 Mission

TimeDAO is a Decentralized Autonomous Organization with one exclusive purpose: ensure the technology remains operational. Its mission is to identify the challenges ahead and pilot the necessary adaptations to make sure the service keeps on functioning.

Achieving this objective will require, amongst other things :

- Development tasks : maintaining/upgrading the source code, the web interfaces and the servers
- Administrative tasks : insuring the decentralized cloud fees and server fees are paid if automatic systems fail
- Management/Decision making : putting to vote and implementing the measures/budgets/changes necessary to adapt to the inevitable technological changes that will arise in the years to come. **This could include migrating to other blockchains and other decentralized clouds or change the tech stack.**

2.2.2 Proposed governance structure

DAO systems evolve very quickly therefore the following is not set in stone and governance structure may vary when we implement the DAO.

The DAO will be run by a small group of agents : the Time Council.

Time Council members will be in charge of :

- Making proposals to ensure the persistence of the service. Those proposals will then be submitted to a general vote.
- Taking the necessary actions to enforce the proposals approved by a vote
- Reporting to the general assembly of \$TDAO token owners
- Keeping the vault (where the important credentials are stored) safe

To illustrate let's take an example:

2028, nodejs became obsolete, running the gateway servers will soon become problematic with the current binaries.

TheTime council :

- 1. Addresses the problem and decides it is time to develop a new gateway server using a different, more modern, stack.*
- 2. Drafts a document describing the task and gets estimates from freelancers, job boards, companies...*
- 3. Submits a proposal and a budget for the task at hand to a general vote.*

If the proposal passes, it is now up to the council agents to :

- 1. Hire the devs*
- 2. Validate the end result*
- 3. Emit the payment for the task on the DAO's funds*
- 4. Publish the source of the new server on the DAO's git repository, etc..*
- 5. Install the new server with the API keys from the Vault*

2.2.2.1 Time Council special fund

In order to incentivize and to valorize the Council members, a special fund will be created that will receive part of the profits generated by the TimeApps. This fund will be distributed amongst council members every year.

2.3 SDK & Time Apps

Time Apps are applications centered around the concept of time locking.

TimeDAO provides a trustless time-locking storage service called TimeAtom. TimeAtom powers the TimeApps whether native or developed through the SDK. It is composed of 3 elements :

- Layer2 Blockchain : stores the data necessary to retrieve the TimeApps content at a specific date.
- Decentralized cloud (currently StorJ) : stores some TimeApps content.
- Binaries : server (nodejs) acting as a gateway between the decentralized cloud and the client. Allows uploading and retrieving

We developed a very straightforward JavaScript SDK for TimeAtom, still in its early phase, that makes it easy for devs to integrate the service to their code. It is available on GitHub.

2.3.1 The first TimeApp : The Digital Time Capsule Service

The first TimeApp developed and managed by TimeDAO is something we hope will be routinely used by people everywhere to store something for the future and transmit it easily : the TimeCapsule.

A Digital Time Capsule is an encrypted, decentralized storage space that will open on a specific date and time. This service allows the creation of time capsules and propose innovative methods to facilitate their conservation and transmission (NFC physical object, QR code, NFT)

We envision the TimeCapsule as a public service, like the post office except you send something *sometime* instead of *somewhere*.

As such it must be reliable, cheap and easy to access, which means it can't be a crypto only app. You shouldn't need to have a metamask installed to create a capsule. Our vision is that time capsules should be sold both online with credit card and in retail stores and we are very committed to the idea of expanding the awareness of the concept in the general public.

2.3.1.1 NFC & TimeApps

TimeCapsules can be set to open decades from now. How do you store your credentials? How do you transmit them easily?

One answer is physical objects.

We will develop a mobile application to store and retrieve capsules on NFC enabled physical objects. Once transferred you won't need to remember the credentials anymore, you can treat it as you would any object : give it to someone or keep it on your desk until the time comes.

Although TimeCapsules will be transferable to any NFC enabled storage, we will propose a physical object containing a NFC chip specifically designed to hold information for at least 200 years (NFC standard ST25TA512B). This will increase both revenue and brand awareness and more importantly awareness of the concept of TimeApps and digital transmission, the end goal being retail stores.

2.3.1.2 NFT Time Capsules

TimeCapsules credentials will be linkable to any NFT and stored inside an Ethereum wallet, making it easy to store and transmit digitally.

3. \$TDAO Token

TimeDAO's native token is called \$TDAO. It will be created on Ethereum Mainnet as an ERC20 token with a fixed supply of 100M tokens allocated as follows :

3.1 Token Distribution

TimeDAO will create a NFT collection - The "Time Zero Series" and launch a public NFT Fundraiser on Opensea.io.

Once stacked on the DAO's website, "Time Zero" NFTs will earn TDAO tokens daily to their owners for a period going from 30 to 180 days, depending on the NFT.

Please note that the following is a projection and can be modified if needed.

	% distributed	Distribution date
Tokens distributed to NFT owners	20%	Starts 3-12 months after the NFT sale and lasts for 180 days
Liquidity Bootstrapping Pool	5%	Immediate
Public sale	10%	Immediate
Founders	20%	Starts 12 months after the NFT sale and lasts for 48 months
Team & Advisors	5%	Starts 6 months after the NFT sale and lasts for 12 months
Ecosystem Fund	15%	Starts with the public sale. Will be distributed through Liquidity Mining/POL during the next years
DAO Vault	25%	-

The different sales proceeds will be distributed as follow:

Department	Allocation
Team	20%
Liquidity mining collateral	50%
DAO Vault	30%

DAO Vault	Allocation
Product development: TimeCapsule, TimeWallet	33%
Project development (core, DAO, NFC, SDK)	28%
Marketing	21.5%
Outsourcing, Advertising, Misc.	17.5%

3.2 Token Vesting

The stackable NFT mechanism emulate the following vesting table:

Token allocation	Supply	Vesting
NFTs	35%	Variable, see above
Team & Advisors	5%	10% no lockup, 90% 18 months vesting + 6 months cliff
Treasury	25%	No vesting
Ecosystem fund	15%	No vesting
Founders	20%	48 months + 12 months cliff

3.3 Ecosystem fund

The Ecosystem Fund will be used to create and maintain liquidity for the token. At the end of the LBP phase we will use a percentage of the funds raised in the previous phases to create Liquidity pools on DEXes such as Uniswap and later on, after we develop bridges to Polygon and BSC, QuickSwap and PancakeSwap.

Instead of using a classic liquidity mining pattern where you essentially rent liquidity we will adhere to the POL pattern and **buy** liquidity.

POL(Protocol Owned Liquidity) is a new concept in DeFi. It has been pioneered By OlympusDAO earlier in 2021 and, in our opinion, is a total game changer as it provides an organic income source to protocols without them having to sell a service.

POL essentially transforms a liability into an income source. Thanks to POL, Protocols no longer need to pay out high incentives to rent liquidity.

How does it work

Instead of staking their LP (liquidity provider) tokens for farming rewards in a pool 2, users can exchange their LP tokens for the protocol's governance tokens at a discounted rate. This is done through a process called Bonding . As the protocol never sells these LP tokens, the liquidity is effectively locked within its treasury and, more interestingly, starts generating LP fees for the DAO!

We will leverage OlympusDAO's platform , OlympusPro, to help our protocol acquire its own liquidity.

More info regarding the POL pattern can be found here : <https://docs.olympusdao.finance/pro/>

3.4 DAO Vault

A governable vault will be created. It will be seeded with 25% of the total supply (25,000,000 \$TDAO).

Vault resources will be used to fund initiatives that benefit the project like R&D and system optimization. Any vault spending will be subjected to a Council vote.

3.5 Token Utility

The \$TDAO token will be used as a governance token allowing any token holder to take part in the DAO's decisions.

The \$TDAO token will also be used to pay the fees incurred by usage of the services provided by the DAO. In particular we intend to incentivize SaaS clients to use the \$TDAO token to pay for the service by offering a rebate.

4. Technical solution

4.1 Decentralized storage service

The basic service provided by TimeDAO is akin to a decentralized storage service with a time lock feature.

It is composed of 3 elements :

- Layer2 Blockchain : Stores the data necessary to retrieve the TimeApps content at a specific date.
- Decentralized cloud (currently StorJ) : Stores some TimeApps content.
- Binaries : Server (nodejs) acting as a gateway between the decentralized cloud and the client. Allows uploading and retrieving.

4.2 Website / React App

All our TimeApps will be offered through a phone app and a dedicated React WebApp. Allowing users to create or retrieve their content using a graphical interface.

4.3 Smartphone App to store and retrieve TimeApps with NFC

TimeDAO will do everything in its power to preserve content stored in your TimeApps. But how do we make it easier for you not to lose your credentials?

After wondering about carved objects for a moment we opted for NFC. NFC chips are small and cheap and some NFC chips are specifically designed to retain information for more than two centuries. The perfect candidate.

The TimeCapsule and TimeWallet mobile apps will also allow you to store and retrieve your capsules' access codes on NFC chips, be it your own chips or the ones that TimeDAO will offer.

4.4 Physical Time Capsules

We will offer physical objects containing a NFC chip specifically designed to hold information for 200 years. Our goal is to have it distributed both online and in retail stores.

Download the mobile app (yet to be developed), place your smartphone over your NFC object to load the capsule's access codes into the NFC chip it contains.

When the time is up, placing your phone on the NFC object again will act as a key to connect with the blockchain. You can now retrieve the capsule content from the decentralized cloud.

4.5 NFT Time Capsules

Any NFT can be augmented with Time-Locked content (Capsule, Wallet, or any other TimeApp) and become a TimeNFT.

5. Tokenomics

5.1 Token utility

\$TDAO is a governance token (1 \$TDAO equals one vote in the DAO).

\$TDAO can be used to pay for the services proposed by the DAO

\$TDAO will be stakeable in exchange for rewards.

5.2 Incentive Mechanisms

5.2.1 Airdrops & Liquidity mining program

The ecosystem fund will be used to reward participants who create value for the project. This includes, but is not limited to, airdrops, bounty programs and liquidity mining campaigns.

Instead of using a classic liquidity mining pattern where you essentially rent liquidity we will adhere to the POL pattern and **buy** liquidity.

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5.2.2 Rewards Pool

Up to 50% of the fees collected by the DAO through its services will be added to a Rewards Pool. The rewards will be distributed periodically to stakers proportionally to their participation in the staking pool.

6. Community owned-and-run project

We plan on transitioning from a centrally-governed entity to a community owned-and-run project within 3 years. To this effect, at the end of the third year, 65% of the tokens will have been distributed to the community, enabling decentralized control of the evolution of TimeDAO and its associated services.

To facilitate the structuration of the community (and make it more fun) we will develop a gamified community lore through the creation of a “tree of incentives” giving access to exclusive rewards (NFT, airdrops, events, etc.) and advantages.

We will also valorize the Time Council members as much as possible as they will be the warrants of the survival of the project in time.

As an incentive, Time Council members will receive a share of the DAO's profits. They will also be periodically “glorified” : NFT commemorating their mandates will be emitted and distributed to the community, memes will be created in their honor, etc...

7. Business Model & Commercial Strategy

The project's main sources of revenue will come from:

- **The fees earned through our TimeApps** : TimeCapsule and TimeWallet are designed to be both cheap for the user and very profitable for the DAO.
- **The fees earned through third party TimeApps**: Third party timeApps will have to pay fees to have their operations validated on our blockchain.
- **Selling physical NFC-chipped objects as a product** : We will offer a range of nicely designed physical objects. This will increase both revenue, brand awareness and more importantly awareness of the concept of digital transmission. The end goal being distribution in retail stores.
- **Operating a marketplace for the physical NFC-chipped objects**: By opening a marketplace to a multitude of selected creators offering NFC compatible physical objects, we will provide the public with a rich product ecosystem, the creators with an attractive display, and both the DAO and the \$TDAO token holders with additional revenue streams.

8. Project History & Roadmap

Q3 2020

- Rapid prototyping of a POC

Q4 2020

- Development of TimeCapsule POC
- Tokenomics
- White Paper
- Deployment of a test DAO on Rinkeby testnet
- POC is online

Q1 2020

- Migration to Layer 2 xDai chain
- Update of the existing smart contracts and binaries to use xDai
- Development of new features on the POC

Q2 2021

- Team assembling
- Website creation
- Marketing strategy conception

Q3 2021

- Preparation for the NFT Fundraiser
- Creation of the \$TDAO token
- Incorporation of the company
- NFT creation

Q4 2021

- NFT Fundraiser (Nov. 26)

Q1 2022

- LBP (Jan.)
- Public Sale (Feb.) & Creation of Liquidity Pool
- Recruitment of team
- External audit of the smart contracts
- Beta release of the TimeWallet
- Development of TimeCapsule App for iOS/Android
- NFC-chipped objects extension for TimeApps
- NFT integration for credentials safeguardings
- Beta Release of the TimeCapsule

Q2 2022

- **Foundation of the DAO**
- Official public launch of the TimeCapsule
- Development of cloud redundancy solutions
- Development of the staking mechanism
- Launch of first NFC-chipped objects collection
- Development of a marketplace for NFC-chipped objects creators

Q3 2022 and Beyond

- Partnerships with brands and retail stores
- Partnerships with metaverse projects