D-frame White paper

Monetising decentralised data economies

Changing the data ownership dynamics with web 3 systems

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Abstract

D-frame is a decentralised Data ecosystem to help people monetise their personal data with privacy, support businesses with dynamic value laden data and encourage developers to build for re-imagining the data economy. Using blockchain based smart contracts for trust and a D-frame token for value generation; the ecosystem aspires to be a community driven sustainable effort. People can earn real passive income through their daily browsing and businesses can fetch quality data to increase their revenue. Also, geospatial location mapping and optimisations are possible across the economy via dynamic and rich decentralised user data sets. D-frame hopes to be a base pipeline of the modern data oil economy, by providing value to all the ecosystem members; through balanced incentives and governance structures.

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Introduction

Why do we need D-frame ?

D-frame will help in creating a transparent and decentralised data marketplace for both value seeking businesses and consumers hoping for fair compensation. It creates a secure, transparent and decentralised ecosystem for users that helps them own, track and easily convert their personal data into money.

Now days, it is hard to browse through the internet without coming across websites which completely deny users services, if data is not shared. Many companies, websites and applications have our personal data, which is regularly processed, analysed and sold to various third party companies doing the same. Our data passes from one hand to another generating money for retailers, advertisers, big data analytics and a wide range of businesses benefitting from it. The data changes many hands and is stored in different forms. This makes it almost impossible to segregate and isolate. Data ownership is in a very nascent stage and we are trying to build mechanisms to justify the ownership.

The blockchain ecosystem has seen useful data protection inventions via platforms like the Brave browser[1], Swash[2] and Cirus[3] ecosystems. Further, many privacy enhancing protocols from erstwhile Monero[4] and Z cash[5] to current Pirate Chain[6] and Kilt[7] protocol. The imagination certainly exists, however we do see the need for D-frame. *Firstly, Brave very bravely tries to create a shared revenue on its browser via the Brave token[8];* starting with the Youtube platform. However, this does not extend to the entire gamut of data being shared and extracted on a day to day basis from users. Also, there isn't an active data marketplace for purchasing and trading of dynamic data packets, targeted advertising or aid in data optimisations across the economy. We aspire to take support of privacy by choice platforms and offer users as much freedom as possible. Finally, seeing Swash and Cirus as working on a similar mission; we hope for as much useful collaboration as possible.

As most of the data and digital advertising market is monopolised by big technology companies, there is a huge gap when it comes to the ownership of personal data. These companies make it really hard for an individual to use their platform or services, without allowing them to collect user data. Most of the time, the user permits companies and platforms to collect their data. It is a requirement not a choice, making it more like a one sided trade benefiting only the company collecting data. This gap is due to the unavailability of a medium of exchange between the user and the company to negotiate the fair value of user data. D-frame bridges this gap by helping users get a fair value of their data and hence contributing in creating more transparency in the monopolised data marketplace.

The D-frame token works as a medium of exchange for data related transactions. When two or more parties want to exchange data of an individual or entity, D-frame allows these parties to exchange data without losing their ownership. D-frame also keeps a track of where the data is being used and how many times it is being exchanged. This creates a transparent and secure channel to exchange data. Whenever the data is exchanged, the owner or the owners are compensated by the system in the form of D-frame tokens. The user can then exchange these tokens for other crypto tokens or fiat currencies.

The companies that use D-frame systems and services or want to buy data from the open decentralised market, pay a nominal fee. This fee is used to fairly compensate the owner or owners of the particular data set. D-frame helps its users by protecting their data and giving the user a choice to share, sell or make your data private. The entire ecosystem works on 4 important aspects of Data ownership, which are: data privacy, data organisation, data usage and data monetisation.

About D-frame

2. What is D-frame ?

D-frame or Data Frame is a new kind of data structuring and processing technology that is made on the principles of Blockchain, Big Data Analytics, Deep Neural Networks, Smart Data Processing and Data Valuation Principles. D-frame helps a user calculate monetary value of the personal data they are sharing with various companies, websites, applications and softwares. D-frame is designed to help the user by giving individuals freedom to own, manage and monetise one of the most valuable digital asset, “Data”.

Important Aspects of D-frame

1. Data Valuation Engine (DVE)
2. Data Identity and Data Profile (DIDP)
3. Mycelium Data Pool (MDP)
4. The Smart Way (TSW)
5. Selective Data Filter (SDF)
6. Progressive Pattern Combination (PPC)

1. Data Valuation Engine (DVE)

DVE is an algorithmic function that calculates the value of data collected by a company via website, app or a software. DVE works on the principles of data pooling, data point collection and distributed data processing functions. DVE also helps D-frame evaluate the source data and structurally connects it to the data pool, which makes the data set ready for commercial use at a fair base price.

2. Data Identity and Data Profiling (DIDP)

2.1 Data Identity (Virtual Identity)

Data Identity is a secure virtual identity that creates an encrypted identity for a user to safely share data points with systems online without any possible data breach. Data Identity makes it almost impossible for any system or software to isolate you as a user and collect multiple data points on you. Data Identity helps you maintain privacy and anonymity while interacting with various online channels and systems that are designed to collect and process data on you, like social media, e-commerce, online gaming and Internet Browsing.

2.2 Data Profile (Virtual Profile)

Data Profile is a map of all the data points you own and all of your online activity organised and connected with your Data Identity. Data Profile helps you share particulars of your data map without giving away sensitive information like your name, email address or phone number. Data Profile helps systems identify data points that they require without collecting and processing your entire data map. Data Profile also helps you understand your own online presence and helps you identify what type of data you own and what you are sharing with other systems and companies.

3. Mycelium Data Pool (MDP)

D-frame collects, structures and profiles user data to form multi dimensional data stacks, These data stacks form a large pool of data we call Mycelium Data Pool or MDP. In MDP each individual data stack is connected to all the data stacks, which make it more valuable and faster than conventional data pools. When you add new data, it won’t have to recalibrate the pool, instead it will start linking with other data stacks in real time. This makes the data pool a dynamic yet structured system. MDP contains all the user data points from ‘Data Profiles’ which makes the data readily available for processing and usage.

4. The Smart Way (TSW)

TSW is a new age Artificially Intelligent data processing and management system that not only helps you manage your data, but also makes data processing more efficient than conventional data management softwares. TSW's stacking protocols and live data structuring functions, make it easier for systems to use TSW for big data and real time data processing. TSW enables systems to collect, organise and structure data as they require which makes it a flexible and customisable system. TSW has pre programmed data structuring functions like Smart Way Stack Protocol (SWSP) and Tag Sequencing Protocol (TSP) that enable other systems like D-frame to build on top of it.

5. Selective Data Filter (SDF)

SDF is a filter application method to integrate filters requested or created by a system for data segregation and data extraction. SDF allow systems to recognise and analyse data sets relevant for custom functions and specific actions. This feature makes it possible for systems to interact with big data pools and extract the most relevant and appropriate points rather than going through each data point. Systems that will run on SDF will not require bulky hardware and high computation power because even if the size of the data pool is too big, the system will only use relevant data points required. Hence, only a fraction of computation will be needed to keep the system up and running.

6. Progressive Pattern Combination (PPC)

PPC is a data pattern and data point projection analysis method. PPC structures live data and systematically finds possible similarities, progression, repetition or any kind of pattern in the live and dynamic data pools. PPC makes it possible for a large data pool to rearrange itself whenever required or whenever a system calls upon a specific pattern combination. the complete data pool according to the specific system or even according to multiple systems can periodically synchronise for the fastest linkage and link identification to make the data pool much more efficient to feed system with the most appropriate data as fast as possible.

Vision

Data Dreams

By empowering users, D-frame aspires to redefine and restructure the way internet works. It will transform how data is collected and valued, neutralising the power dynamics between companies and users. D-frame will help create a more transparent and decentralised data exchange system, which will make the existing internet a more fair and transparent medium. Being in the inspiring Blockchain ecosystem, we hope to leverage on the great work carried out by smart contracting platforms like Ethereum, Solana, Cardano, Polkadot etc. Also, for storing user data, decentralised and open storage platforms like Filecoin, Siacoin etc. would be used. Also, earlier blockchain experiments around Universal Basic Income like Grantcoin (Manna) and UBISeed have not yielded successful results in a world constantly challenged by climate change, refugee crisis, economic inequality and global health pandemics. With income generated by successfully targeted advertisement and data packets sale, a consistent minimum basic income is an aspiration. Support from wealth re-distribution models in Development Economics would certainly be taken, to aid in a balanced and consensus driven distribution of wealth across the community.

D-frame Use Cases and Future Systems

D-frame consists of an encrypted identification system, multi-dimensional data pool, data stacking system and data valuation engine. We have divided our product journey among three generations:

1. Generation 1 (in 1 year)
2. Generation 2 (in 3 years)
3. Generation 3 (in 5 years)

1. Generation 1 Systems

1.1 AD-frame

AD-frame is an advertising system build on D-frame and developed by D-frame to help businesses and Companies reach target audience through the D-frame database.

AD-frame helps in:

1. Targeting the right audience
2. Reaching the audience in real time
3. Instant advertising

1.2 Location-frame

Location Frame will transform the delivery and mobility industry by processing geospatial data and realtime location data. It will enhance the accuracy of autonomous vehicles and improve automatic delivery systems.

Location-frame helps in:

1. Realtime location data analysis
2. Realtime data feed support for autonomous vehicles
3. Traffic movement predictions
4. Support system for disaster management
5. Choosing the right location for businesses
6. Better infrastructure and live mapping for Drone delivery systems

1.3 Projection-frame

Projection-frame is a new way for predictive analytics. D-frame based and data-driven Projection-frame can help companies solve long-standing problems in new ways. Companies will be able to use predictive analytics for more accurate forecasts, such as forecasting the demand for electricity on the electrical grid. These forecasts will make resource planning more effective. Projection frame will help industries as diverse as finance, healthcare, pharmaceuticals, automotive, aerospace and manufacturing.

1.3.1 Automotive - Projection-frame will help in development of better autonomous vehicle infrastructures. Companies developing driver assistance technology and new autonomous vehicles will use projection frame analysis to analyse data from connected vehicles and to build driver assistance algorithms.

1.3.2. Aerospace - From aircraft maintenance to flight trajectories, projection frame will help in creating better models for aerospace companies. To improve aircraft up-tim and re uce maintenance costs, an engine manufacturer can create a real-time analytics application on projection frame to predict subsystem performance for oil, fuel, liftoff, mechanical health and controls.

1.3.3. Energy Production - Projection-frame can help in forecasting electricity price and demand. It can be used to build sophisticated forecasting applications that can monitor plant availability, historical trends, seasonality and impact of weather on energy production.

1.3.4. Financial Services - Supports developing risk projection models. Financial institutions will be able to use projection-frame to build evolved financial models and systems for projecting risk. It will simplify risk auditing for investments and financial asset management.

1.3.5. Industrial Automation and Machinery - Models that will predict machine failures can be build upon projection-frame. Companies will be able to save a lot of resources by using machine health monitoring and predictive maintenance applications. These applications will reduce downtime and will minimise resource wastage.

1.3.6. Medical Devices - Projection-frame will help in creating algorithms that will be able to detect patterns to spot diseases and medical conditions. For example, an asthma management device will record and analyse patient's breathing sounds and will provide instant feedback via a smart phone application to help patients manage asthma and other breathing conditions.

2. Generation 2 Systems

2.1 Health-frame

D-frame will transform the way we handle, analyse and make use of data in any industry. One of the areas where its application will have immense importance is healthcare. The healthcare industry faces various challenges, including maintaining optimal operational efficiency, securing health records and real-time monitoring of health. Systems built on D-frame and Projection frame will enable access to more efficient insights and operations into the patient's health condition. With a massive volume of data like clinical, financial, administration, R&D, operational and financial data available in the healthcare sector, systems built on D-frame and Projection-Frame will help in deriving meaningful insights and will enhance the operational efficiency of the industry.

2.2 DAO-frame

Through data gathered in the Generation 1 systems; advertisement, location and projection based information would be organised to offer real time market based interactions. Further, this could help organise a DAO (Decentralised Autonomous Organisation) marketplace. A DAO helps in social organisation of corporations, public and private institutions; by offering an interaction layer with social, financial and political decision making abilities. With centralised and decentralised organisations possible, along with hybrids; it is expected that platforms like Aragon will evolve the DAO ecosystem even more. Be it for SME's (Small Medium Enterprises) or local municipalities or universities or large scale social organisations; a dynamic market place can evolve which helps people find the right DAO fit. Here, we hope to have market based data interactions, to offer support. For e.g. it is possible that the DAO for a primary school in Uganda seems to fit well for a local municipality in India. Providing transparency in costs and adaptability, this marketplace could help further adoption of DAO with a suitable support system.

2.3 Defi Data Marketplace

Decentralised Finance offers a large scape of user generated behavioural data. From choice of yields, platform, time frame to choice of invested assets. With more synthetic products arriving through platforms like Synthetix, interaction with the non-blockchain world is only increasing. Further, with more sophisticated products and user demand arriving, a behavioural data pool platform can be an asset for improving suitability and adaptability. Extending this to CEFI (Centralised Finance) and building on support from Generation 1 systems, we hope users can analyse the risk and profitability tradeoff much better, as the platforms offer more personalised results.

2.4 Flow

creating strong and resilient supply chains, is of utmost importance in a global, interdependent and climate change influenced world. From basics of food, shelter, clothing to water, internet, education and lifestyle support systems. All these supply chains are global and centralised to a large degree. With support from supply chain platforms like Vechain; a lot of useful tracking, auditing, accounting and quality control is possible now in diverse industries. Insights generated from Generation 1 systems applied on industrial scale, can help better align requests, manage inventory and create decentralised redundancy in the system. Further, customer based behavioural insights helps in understanding demand in situations of emergency.

3. Generation 3 Systems

3.1 Decision Making Matrix

DMM helps in supporting supporting advanced data driven decision models, through market and behavioural insights collected in Generation 1 and Generation 2 systems.

3.2 Self Enhancement System

With permission data collected and processed in an open source way, systems can learn, adapt and evolve continuously. This include B2B (Business to Business) and B2C (Business to Customer) models.

3.3 IOT Framework

An internet of things infrastructure supports machine to machine communication for enhanced efficiency and social integration of systems. The Generation 1 and Generation 2 systems will provide behavioural insights for fulfilling personalise requests via the IOT framework for both machines and humans.

3.4 Web 4.0

A Pipeline support system for a more realistic and socially adaptable Metaverse experience, is the vision for a Web 4.0 product. Via the expansive permissioned data collected and shared, users will be able to have more private and commercially valuable experiences, across both centralised and decentralised platforms.

D-frame Architecture

D-frame consists of an encrypted identification system, multi-dimensional data pool, data stacking system and data valuation engine.

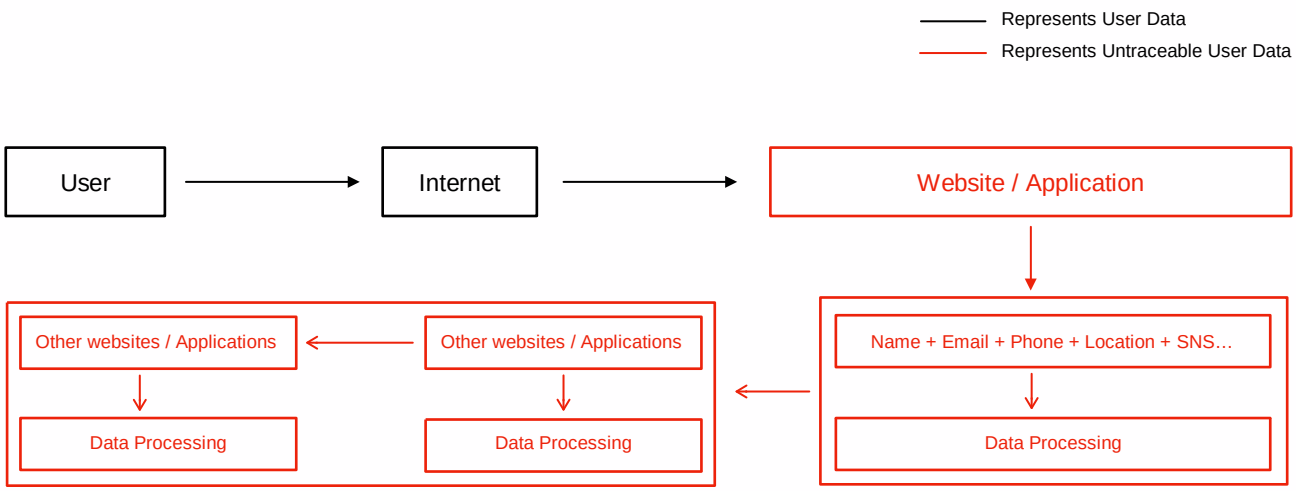
Important Aspects of D-frame Architecture

1. Data Identity and Data Profile (DIDP)
2. Mycelium Data Pool (MDP)
3. The Smart Way (TSW)
4. Data Valuation Engine (DVE)

1. Data Identity and Data Profiling (DIDP)

1.1 Data Identity (Virtual Identity)

Diagram - 1.1.1 Data Flow from User to Website / Application

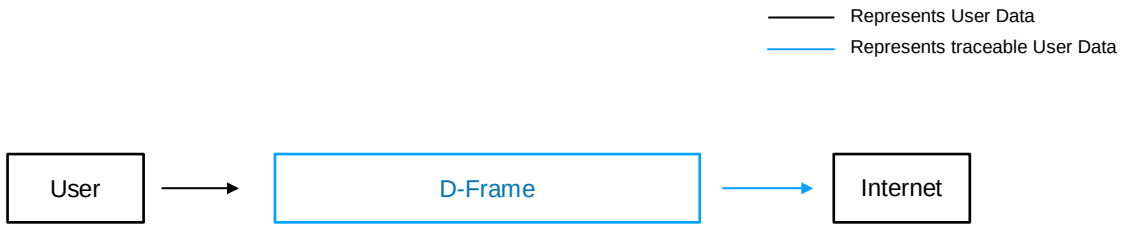


1.1.1 - Data Flow from user to website / application and from website /application to other websites / application

*Note - 'Data' here is also referred to as information.

When a user visits a website or uses an application, it collects personal information from the user. This information is most of the times mandatory to view contents of a site or to use the application. This information is then stored, processed and even sold, without the users consent.

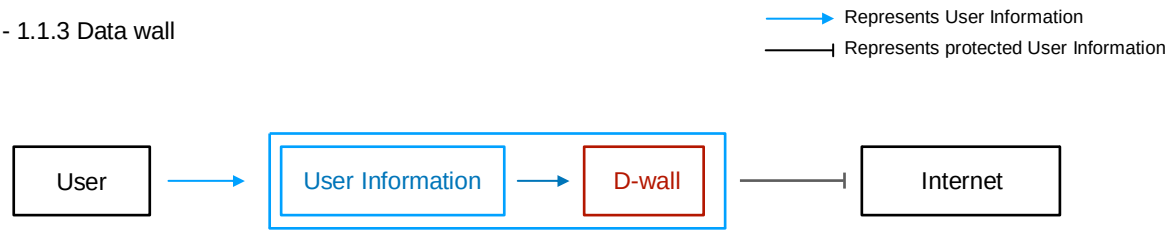
Diagram - 1.1.2 Data Flow from User to Internet via D-frame



1.1.2 - Data Flow from user to Internet via D-frame

When a user that has D-frame installed on the device, visits a website or uses an application, the website or application will not be able to collect user's personal data without consent.

Diagram - 1.1.3 Data wall

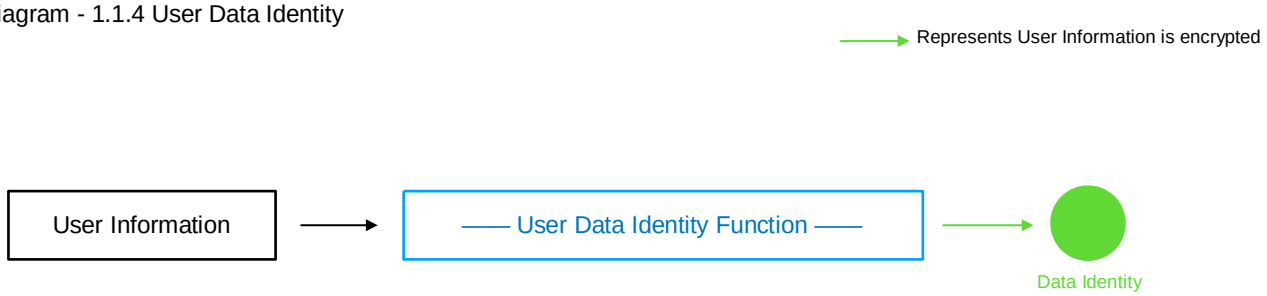


1.1.3 - Information Flow from user to Internet via 'Data Wall'

*Note - 'Data' here is also referred to as information.

D-frame has a strong fire wall feature called D-wall. It prevents websites from collecting user's personal data. D-frame also helps in creating a 'Data Identity' that lets the user share data online with secure and transparent systems.

Diagram - 1.1.4 User Data Identity



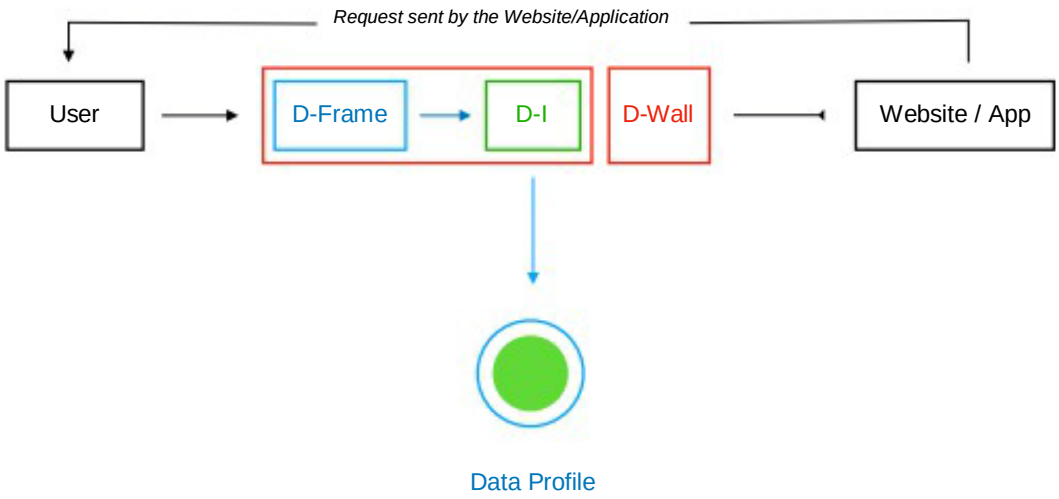
1.1.4 - Information Flow from user to 'Data Identity'

*Note - 'Data' here is also referred to as information.

When the user installs D-frame for the first time, D-frame system asks the user to create a 'Data Identity' or D-I.
The information stored in D-I is in an encrypted form. Only the user can access this encrypted information stored in D-I.
D-I enables user to share data with various systems via D-frame in a secure and transparent way.

1.2 Data Profile (Virtual Profile)

Diagram - 1.2.1 Data Flow from User to Data Profile



1.2.1 - Data flow from user to ‘Data Profile’ via ‘Data Identity’

*Note - Here, ‘data’ and ‘information’ are used interchangeably.

When a website or application requests for user data by calling functions like cookie or caches from the user device. The data is either blocked by ‘D-Wall’ or sent according to the user consent and settings. The information requested by the website or application is sent via D-frame which parallelly adds the data to the users D-I.

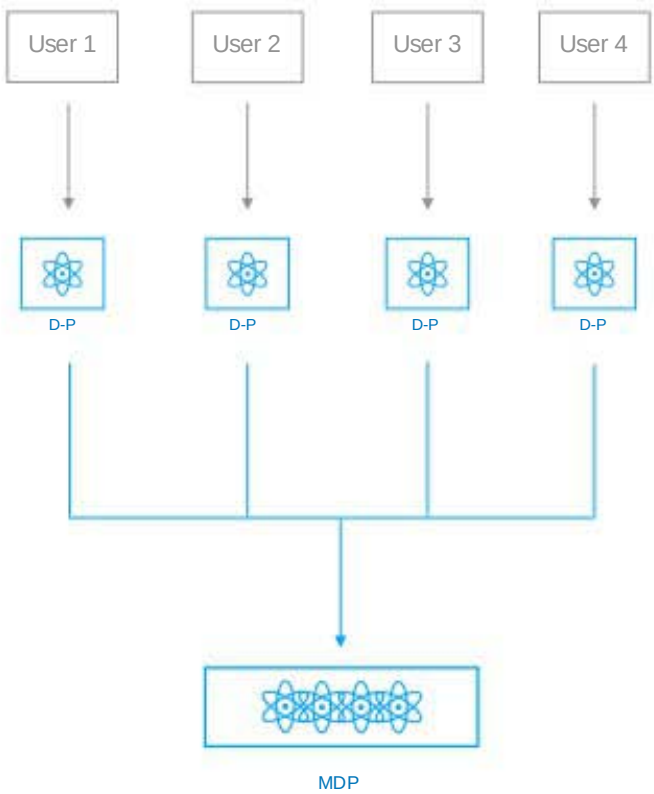
Diagram - 1.2.2 D-I and D-P

1.2.2 - Representation of Data Identity and Data Profile

User creates data by using applications and visiting websites. Overtime, this creates a lot of data, which being generated by the user is added to a data set by D-frame. This data set is attached to the user’s D-I. The entire data set added to the user D-I is refer to as ‘Data Profile’ or D-P.

2. Mycelium Data Pool (MDP)

Diagram - 2.1 Data Flow from Users to MDP



2.1 - Representation of collective user data in MDP

Multiple profiles create a pool of data, this contains all the data points from user profiles connected together. As we can see in Diagram 2.1 the pool contain 4 D-P's.

Diagram - 2.2 Data attached to D-P in MDP

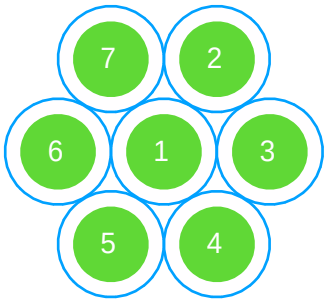
Different Rings represents different types of data sets attached to D-I

2.2 - Representation of different types of data attached to D-P

Note - This is just a 2 dimensional representation of D-P. The actual structure is a multi-dimensional data model.

The data points from D-P's are inter connected and tagged according to different data categories and sub categories. These categories include Interaction or Engagement data, Behavioural data and Preferential data. These sub-categories will be explained in further documents.

Diagram - 2.3 Interconnected Data Points in MDP

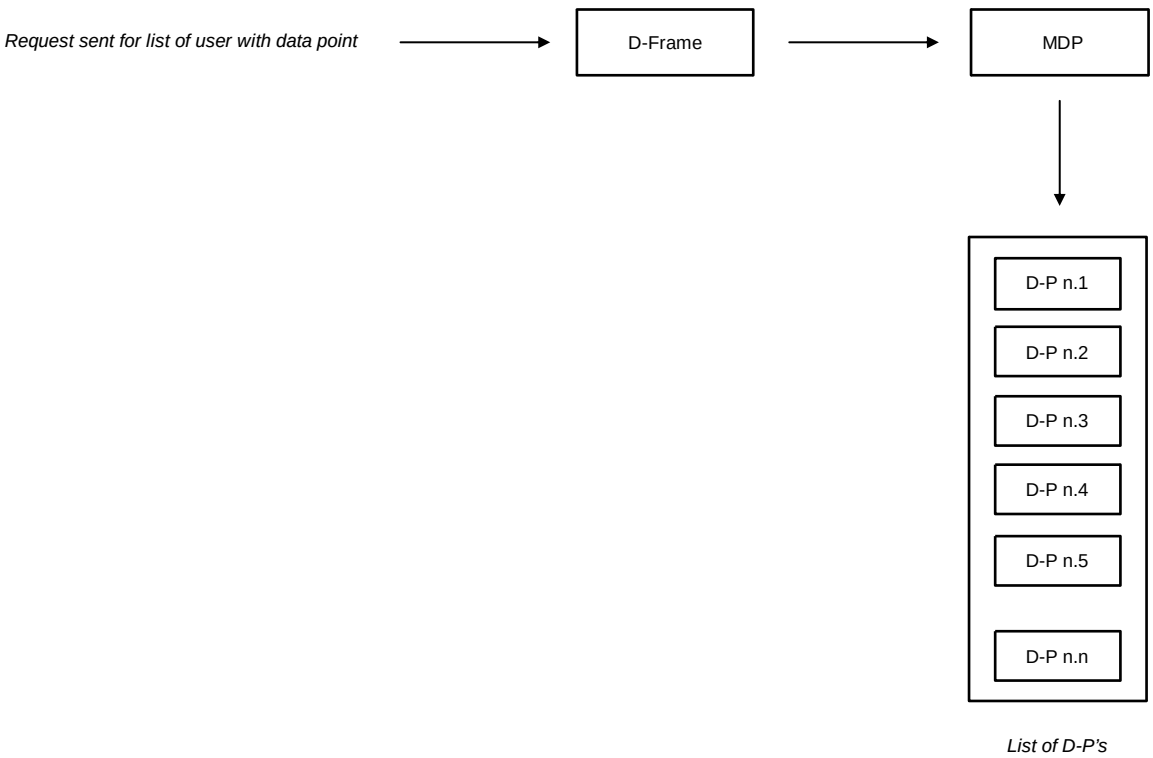


Interconnected D-P's
on one data point

2.3 - Representation of connected D-P's with same data category /sub category

When the data point is specified or is requested, a list of all D-P's having the data point is created. It holds true for any number of data points in MDP. This list is further used to run commands or carry out functions in various systems.

Diagram - 2.4 List of D-P's having the requested data point or points

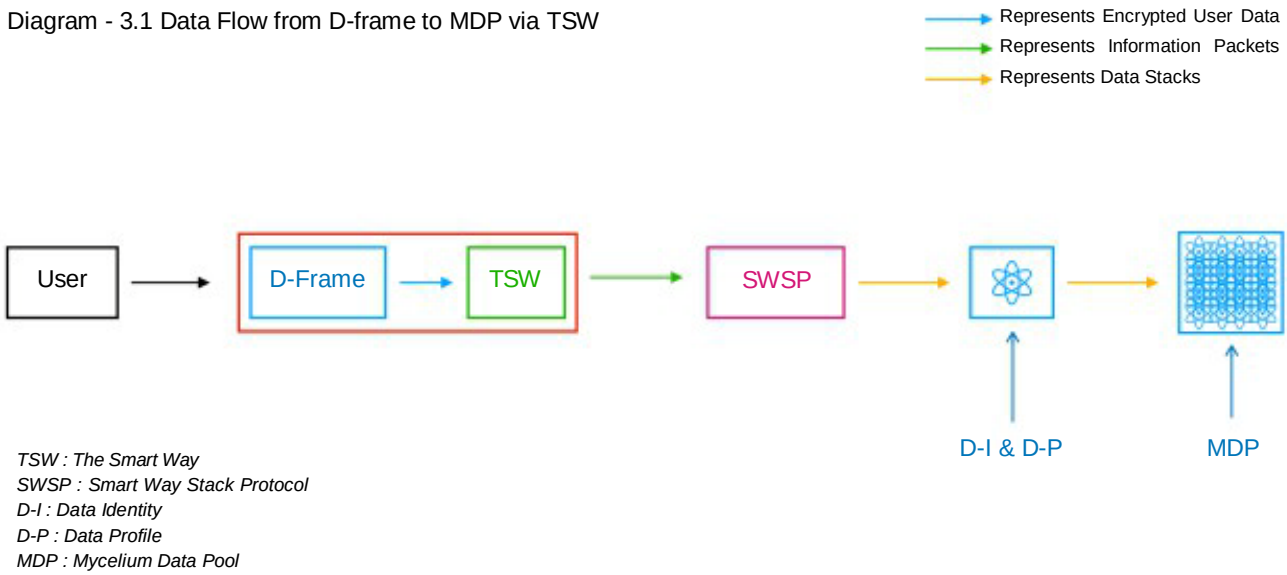


List of D-P's with specified or requested data points

2.4 - Representation of D-P's containing particular data points

3. The Smart Way (TSW)

Diagram - 3.1 Data Flow from D-frame to MDP via TSW



TSW : The Smart Way
SWSP : Smart Way Stack Protocol
D-I : Data Identity
D-P : Data Profile
MDP : Mycelium Data Pool

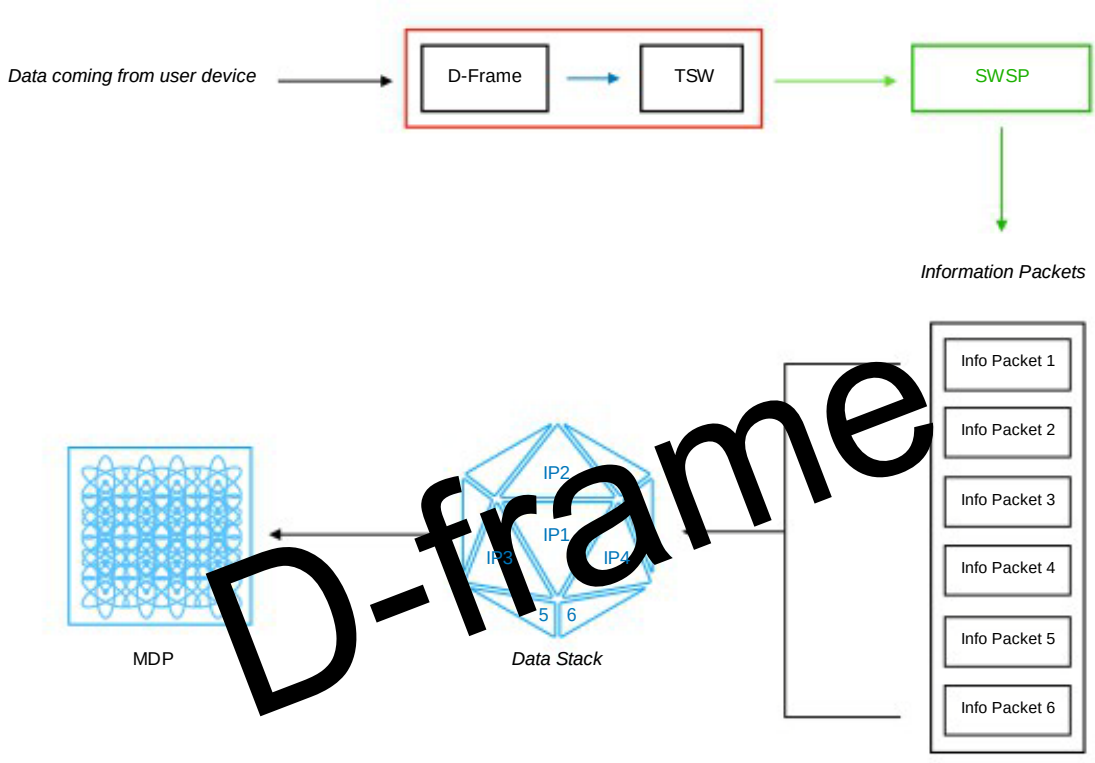
User data is broken into information packets and converted in data stacked

3.1 - Representation of data flow via TSW and SWSP

TSW breaks the data coming from the users into smaller information packets, and stacks the values for each of the variables (information is broken down into variables) into columns. It is a type of data wrangling[1], which is used when preparing data for further analysis.

[1] Data Wrangling : Data wrangling is the process of cleaning and unifying complex data sets for easy access and analysis.

Diagram - 3.2 Data Stacking in SWSP

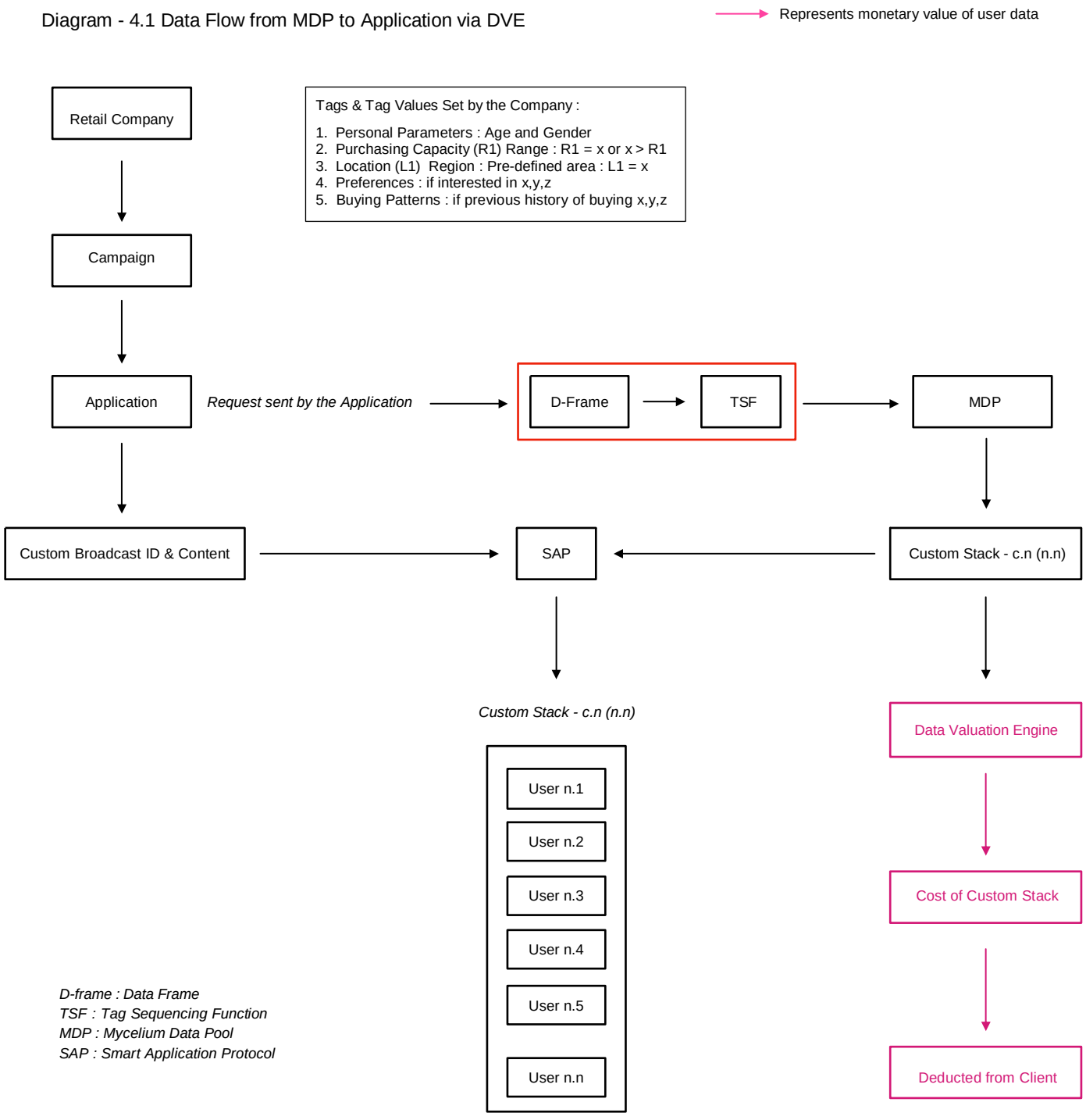


Data stacking in TSW via Smart Way Stack Protocol

3.2 - Representation of data flow in TSW

4. Data Valuation Engine (DVE)

Diagram - 4.1 Data Flow from MDP to Application via DVE



Data that is requested by Software / Application is sent back in stacks

4.1 - Representation of data sent to Application and DVE

Data sent to the application or software is sent in form of a custom stack. The custom stack is a data stack that is customised according to the requested parameters and information. It contains all the information requested by the application from the DP's in MDP. The custom stack is also sent to DVE to evaluate the fair price of information requested by the company or application user.

Diagram - 4.2 Custom Data Stack in D-frame

A custom data stack contains the number of DP's and type of requested data

4.2 - Representation of a custom data stack in D-frame

Custom Data Stack (CDS) is an integral part of D-frame. CDS contains the core structuring metrics for calculating the value of data. DVE calculates the fare value by adding all the information requested by the application or user and then multiplies it with the number of DP's containing that information.

Revenue

D-frame uses realtime transaction settlements to implement a fair and transparent revenue distribution model. The following sections outline the various revenue streams found within the D-frame ecosystem. These consist of income generated from the sale of datasets or the provision of services.

1. Revenue from data sales
2. Revenue from D-frame systems, softwares and API's
3. Revenue from subscription of services and data oracles
4. Revenue from systems and software licensing

Important aspects of D-frame revenue model for the first two years will be explored. This will include building and marketing the Generation 1 System products. After two years, Projection-frame as a platform could yield a continuous flow of major revenue. This would be dependent on third party applications being built on the D-frame platform using the SDK's (Software Development Kits). Here, insights from Ad-frame and Location-frame would be utilised.

Generation 1 Systems -

1. Ad-frame
2. Location-frame

1. Ad-frame

Ad-frame is a decentralised advertising system that helps in targeting the right audience and supports instant advertisement publishing.

Important aspects for the revenue model[1]:

- Upfront cost (UC)
- Campaign cost (CC): Cost of running a time and user specification based campaign
- Reach (R): Total number of users an Ad can reach

UC: one time amount charged from a client for advertisement (ad) publishing

UC = total number of data assets[2] x base price of one data asset

We are expecting a total of 100,000 data assets in a span of 2 years

We are expecting a total of 1000 clients in a span of 2 years

On average, 1 client could publish 10 ads in a span of 1 year

As the first year will be for software development, this number would be taken for 2 years

Total Ads published in a 2 years time frame:

UC = 1000 x 10 = 10,000 * Base Price

We will be charging a base price of 1 INR[3] per ad per user

Total Projected Revenue generated in the first two years =

10,000 x 100,000 x 1 = 100,00,00,000 INR- 100 crore INR or 13 Million USD approximately

[1] For this model and simplified calculation, only UC is relevant

[2] Data Asset- The number of data wallet holders in the D-frame ecosystem

[3] Base Price- Based on many subjective factors including average CPC (Cost Per Click). The base price can vary based on time-frame, market conditions, advertisement focus and quantity. For example, CPC for Ads on Facebook- USD 1.35, Google Search- USD 2.32, Instagram USD 3.56 in 2021.

The total market size revenue of online advertising is $378 Billion USD according to statista in 2020

We are looking for a market acquisition of 0.0034% in a span of 2 years.

2. Location-frame

Location-frame is a decentralised navigation system that helps in location identification and supports realtime navigation services.

An important aspect for Location-frame is Nav-frame (Navigation API). It allows supply chain and logistics companies to navigate the route for deliveries. Nav-frame can be integrated with your applications or web services for navigation and route planning.

We are expecting a total of 100 clients that will integrate Nav-frame with their applications.

On average, 1 client could request 10,000 map loads in a span of in a span per day

This is 36,50,000 loads per year per client

As the first year will be for software development, this number would be taken for 2 years

Total map loads for all 100 clients:

36,50,000 x 100 = 36,50,00,000

We will be charging a base price of 1 INR[4] per map load per user

36,50,00,000 x 1 INR = 36,50,00,000 INR or 5M USD approximately

Total Projected Revenue generated in the first two years =

36,50,00,000 x 1 INR = 36,50,00,000 INR- 36 crore INR or 5 Million USD approximately

The total market size revenue of online navigation is 994 Million USD according to statista in 2021

We are looking for a market acquisition of 0.5% in a span of 2 years

Total projected revenue for Generation 1 System products (Ad-frame and Location-frame) for first 2 years of operations- 13 M USD + 5 M USD = 18 M USD (140 crore INR Approximately).

[4] Base Price- Based on many subjective factors including average Google Maps pricing which is 7 USD per 1000 dynamic map loads

Expenses

1. Scenario 1 : Projection frame product is adopted

SEED ROUND - 1 M to 1.5 M USD

Year 1 - 400k USD to 500k USD

For Generation 1 Systems

- Ad-frame product
- Location-frame product

Year 2 -

H1 - 200k USD DVE (Data valuation engine) product

H2 - 200k USD (to maintain Generation 1 Systems)

ICO / SERIES A - 2 M to 3.5 M USD

Year 3 -

H1 - 170k USD (to maintain Generation 1 Systems)

H2 - 150k USD (to maintain Generation 1 Systems)

Year 4 -

For Generation 3 Systems

H1 - 500k USD (to maintain Generation 1 and 2 Systems) + (Developing Decision Making Matrix product)

H2 -600k USD (to to maintain Generation 1,2 and 3 Systems) +(Developing Self Enhancing System product)

Year 5 -

H1 - 700k USD (to to maintain Generation 1,2 and 3 Systems) + (Developing IOT-framework product)

H2 - 800k USD (to to maintain Generation 1,2 and 3 Systems) + (Developing Web 4.0 product)

Total Cost in 5 Years - 3.82 M USD

2. Scenario 2 : Projection frame product is not adopted

SEED ROUND - 1 M to 1.5 M USD

Year 1 - 400k USD to 500k USD

For Generation 1 Systems

- Ad-frame product
- Location-frame product

Year 2 -

H1 - 200k USD DVE (Data valuation engine) product

H2 - 300k USD (to maintain Generation 1 Systems) + (Developing Generation 2 Systems- Health-frame and DAO-frame products)

ICO / SERIES A - 2 M to 3.5 M USD

Year 3 -

H1 - 300k USD (to maintain Generation 1 Systems) + (Developing Generation 2 Systems- Defi Data Market and FLOW products)

H2 - 400k USD (to maintain Generation 1and 2 Systems) + (Marketing Generation 2 Systems)

Year 4 -

For Generation 3 Systems

H1 - 700k USD (to maintain Generation 1 and 2 Systems) + (Developing Decision Making Matrix products)

H2 - 800k USD (to to maintain Generation 1,2 and 3 Systems) + (Developing Self Enhancing System products)

Year 5 -

H1 - 900k USD (to to maintain Generation 1,2 and 3 Systems) + (Developing IOT-framework product)

H2 - 1M USD (to to maintain Generation 1,2 and 3 Systems) + (Developing Web 4.0 product)

Total Cost in 5 Years - 5.1 M USD

Note - All figure are in USD

	Senario 1	Senario 2
Y1	400k to 500k	400k to 500k
Y2 - H1	200k	200k
Y2 - H2	200k	300k
Y3 - H1	170k	300k
Y3 - H2	150k	400k
Y4 - H1	500k	700k
Y4 - H2	600k	800k
Y5 - H1	700k	900k
Y5 - H2	800k	1 M
Total:	3.82 M	5.1 M

Note - All figures are in INR

	Senario 1	Senario 2
Y1	2.97cr to 3.72 Cr.	2.97cr to 3.72 Cr.
Y2 - H1	1.49 Cr.	1.49 Cr.
Y2 - H2	1.49 Cr.	2.23 Cr.
Y3 - H1	1.27 Cr.	2.23 Cr.
Y3 - H2	1.1 Cr.	2.98 Cr.
Y4 - H1	3.72 Cr.	5.21 Cr.
Y4 - H2	4.46 Cr.	5.95 Cr.
Y5 - H1	5.21 Cr.	6.70 Cr.
Y5 - H2	5.95 Cr.	7.44 Cr.
Total:	28.45 Cr.	37.98 Cr.

Tokenomics

D-frame Token (DFT)

DFT is powering the D-frame ecosystem. It will be used wherever there is a need for a transaction such as in the data marketplaces, to purchase data from a user or multiple users, or to pay for D-frame applications and softwares.

DFT will be used to reward users according to their contribution to D-frame node validation and storage of data pool on their devices. The DFT Network will be supported by virtual validator nodes at first, then will run on user devices linked to D-frame node validation servers 'DFNVS' to make a more stable and secure system. Each user will be rewarded with DFT according to their contribution to the validation as well as storage of data pool on their linked devices.

D-frame tokens are the native tokens for the D-frame ecosystem. We denote them by the ticker symbol DFT. These tokens are used within the ecosystem as a unit of exchange for buying or selling D-frame data or services. Initially, it is considered to launch them on the Ethereum blockchain. However, we might evolve our decision, based on the potential release of Ethereum 2.0, transaction fee constraints, scalability and interoperability issues.

As demand for D-frame will increase with ecosystem adoption, generated value will be used to balance the token supply, likely through periodical token 'burning'. This will help maintain the supply side deflation and make DFT more valuable over time. Token burning could be carried out per transaction, per block, per fixed time period or per financial value. This will be voted upon by the community and enacted in due time. Initially, we are not starting with a token burn and are even considering donating the burned tokens in future for immediate philanthropic causes.

The vesting period for tokens is a standard practice in blockchain, to prevent extreme price volatility and encourage fair price discovery of the token with real world adoption. Here, the tokens are released according to their usage in due time.

D-frame Token Metrics

Token Name	D-frame Token
Ticker Symbol	DFT
Total Supply	100,000,000
Seed Round (Multiple)	10%
Public Sale (Multiple)	11%
Ecosystem Development	20%
Reserve	20%
Community Rewards	14%
Foundation	10%
Team & Advisors	15%

The various token allocations are:

1. Seed rounds: They would be conducted for private investors to fund the MVP (Minimum Viable Product). Here the minimum vesting period is expected to be of 6 months and a maximum of 36 months. Based on the vesting period, the price of the token would be adjusted, offering risk adjusted reward. For example, longer vesting periods translate to cheaper tokens and shorter vesting periods translate to relatively expensive tokens.

2. Public sale: These would be conducted for funding the Generation 2 and Generation 3 systems. Here, the tokens would be released immediately. They will be conducted over multiple rounds, offering preferential pricing to community members supporting the ecosystem earlier.

3. Community Rewards: These tokens would be vested for a minimum of six months, offering the platform a chance to evolve technically. These tokens would be voted upon and utilised appropriately.

4. Foundation: The tokens would be vested for a minimum of 2 years. As the ecosystem evolves with competent board members and a reliable DAO structure, we will empower them with resources for the well being and prosperity of the ecosystem.

5. Ecosystem development & Reserve: These could be utilised for active growth and generating sustainable income for the community members. A minimum vesting period of six months is recommended.

6. Team and Advisors: The tokens would be vested again for a minimum of 6 months, to maintain sincere interest in serving the project and supporting the price stability of the D-frame token.

Governance

The D-frame ecosystem aspires to be governed openly, while being consensus driven towards the welfare of the community as a whole. For this, a Foundation would be established in due to time and given 8% of the D-frame token supply (8 million tokens) for its welfare activities. Any improvement proposal would be voted upon by the community as a whole and executed upon reasonable consensus. Board members would be elected to the community upon voting and will be responsible for creating road maps, nurturing the data ecosystem and keeping the fair interests of all relevant stakeholders. Veto-powers for the board members on sensitive issues like sale of objectionable data sets related to terrorism, child pornography, ammunitions, hate speech etc. will be voted upon in future. We hope for self regulation of the community, but feel strongly to nurture values of compassion, diversity, humanism, equality and liberty. Further, a full automated DAO (Decentralised Automated Organisation) Foundation is aspired for and will be debated upon. Initially, a quasi automated system works best to ensure the community is safe, rewarded fairly and inspired to participate in this new data revolution.

Roadmap

We at D-frame are working towards creating a more transparent and decentralised internet and data economy which is transparent and more user centric than the conventional internet is.

January 2022 - Prototype

Phase 1 : Post Funding

Year 1 : H1 (First half of year 1)

Development of functions, protocols and D-frame system components

1. Data Valuation Engine Infrastructure
2. Data Identity and Data Profile functions
3. Mycelium Data Pool functions and Infrastructure
4. The Smart Way Infrastructure

Phase 2 : After completion of System Infrastructure

Year 1 : H2 (Second half of year 1)

1. Development of a browser extension and browser plugin
2. Deployment of D-frame browser extension and plugin available on all major browsers
3. A basic console with a dashboard for users
4. Ad-frame
5. Location-frame

After year 1 and completion of data valuation engine, we are hoping to raise 2 to 3 Million USD to develop Generation 2 Systems and to maintain Generation 1 Systems.

Team

As a community driven Blockchain project, we avoid titles and divide our efforts into Management, Technology, Operations and Marketing. Wholistic contributions are always welcome from community members and we encourage all levels of participations and support. Also, we are grateful to our advisors for their guidance.

Management:

Rishabh Kapoor https://www.linkedin.com/in/rishabh-kapoor-27aa994a/

Over a decade of experiences in research and entrepreneurship on finance (Bitcoins/Blockchain). Currently, a long term value investor in blockchain & cryptocurrencies, with over 20+ assets and near one million USD valuation; at market peak (2018).

Major Works:

1. Adviser/Chief Strategist for Manna & UBIseed: Universal Basic Income on the blockchain
2. Drafted a policy framework of digital currency Bitcoin & Blockchain, in Master Thesis work at TU Delft, Netherlands.
3. Researched on MIT & Harvard University's Edx.org education project, UNDP's & GoI's Industrial Process Heat project and climate change issues at leading think tank CEEW.
4. Exited awarded startup (IIT Delhi, IIT Bombay, IIT Kharagpur) creating infrastructure for one of India's first rental marketplace across metropolitan cities. Featured in national newspapers (Economic Times, Financial Express).

Technology:

Rohan Kumar: https://geop.online

Rohan has been working for the last four years in the Technology and startup ecosystem. From creating incubators, research platforms, financial valuation models to hiring software and AI decision making designs; Rohan has a broad technical interest and growing expertise. As an aspiring Blockchain Architect, he has designed the technical framework of D-frame and hopes to prototype and guide the MVP (Minimum Viable Product) of D-frame.

Technology Advisor:

Bart van Maarseveen: https://www.linkedin.com/in/bartvanmaarseveen/

Bart is a Free & Open Source Software advocate now focussed on public blockchain applications. He is passionate about blockchain empowering people and believes it will bring us the web3. The decentralisation of data, content and value as key parts of the web. Bart has created Dutch blockchain communities, mobile wallet / DEX technology and food provenance blockchain products.

Major works:

1. Komodo- Ambassador (https://komodoplatform.com)
2. CoinCollect- Co-Founder, Blockchain Architect (https://coincollect.cc)
3. Open Food Chain- Co-Founder, Blockchain Architect (https://thenewfork.com/open-food-chain/)

Glossary

1	DVE	Data Valuation Engine
2	DIDP	Data Identity and Data Profile
3	MDP	Mycelium Data Pool
4	TSW	The Smart Way
5	SDF	Selective Data Filter
6	PPC	Progressive Pattern Combination
7	SWSP	Smart Ways Stack Protocol
8	TSP	Tag Sequencing Protocol
9	SAP	Smart Application Protocol
10	CDS	Custom Data Stack
11	DFNVS	D-frame Node Validation Servers/System
12	DI	Data Identity
13	DP	Data Profile
14	SDK	Software Development Kit
15	TSF	Tag Sequencing Function
17	UC	Upfront Cost
18	CC	Campaign Cost
19	R	Reach
20	CPC	Cost Per Click
21	API	Application Programming Interface
22	ICO	Initial Coin Offering
23	DFT	D-frame Token
24	DAO	Decentralised Autonomous Organisation
25	IOT	Internet of Things
26	DMM	Decision Making Matrix
27	UBI	Universal Basic Income

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