



MARTIAN NETWORK LITEPAPER

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TABLE OF CONTENTS

Introduction.....	3
Rising to the challenge	4
Key technologies	5
The proposition	6
Implementation goals.....	7
Use cases	11
Tokenomics	12
ICO Structure	15
Community goals.....	16
Roadmap	17
The team	18
References	20

MARTIAN NETWORK

INTRODUCTION

Martian Network B.V. (hereafter referred to as Martian) is a company established on 25 October 2018 in the Netherlands. Martian is dedicated to build a revolutionary incentivized peer-to-peer file-sharing platform which enables users to exchange digital goods. By utilizing the blockchain and its smart contract ,virtual machines will run our Martian token (MAR) and eventually host a fully decentralized digital good platform.

The types of digital content the platform intends to support are: video, music & photo's

MISSION

Our mission is to create a decentralized P2P platform where digital content is stored and where people can take control over their own distribution.

VISION

*Bringing people together with the same **passion** ,**ideas** and **creativity** to spread **opportunities** abroad to others who share the same values to go beyond their dreams.(**PICO**)*

Motto

*Your dream is our dream. (**YDIOD**)*

(We believe by working together we can achieve each other dreams and go beyond)

RISING TO THE CHALLENGE

Thanks to the advent of blockchain technology and the continuous development in networking and peer to peer technologies, the industry is now becoming more and more capable of creating decentralized applications that can cater to users in a way traditional applications cannot. It upends traditional business models and gives users more freedom. Creating opportunities and giving responsibility to each individual in ways that were not possible before.

In that regard, we looked at the following:

EASE AND COST OF USING A CONTENT DELIVERY PLATFORM OR NETWORK

We have seen that there are only view content delivery platforms or networks which are:

1. Feeless
2. Easy to use
3. Allowing monetization of content.
4. Small cuts of traditional pricing

Additionally, content producers have to go through scrutinization of whether their content would fit a curated platform. Centralized business models simply do not support all of the above mentioned aspects.

BIGGER COMPANIES SETTING THE STANDARD

High quality and in demand content is usually exclusive for corporations. However, Martian Network seeks to change that. In order to be a successful content delivery system Martian should meet similar standards: high delivery speed, availability and Digital Rights Management (DRM). Regardless of demand, users want a sense of protection for their intellectual rights. However, corporations may make the mistake of overdoing DRM that can lead to incompatibility with user systems and putting off potential customers.

HIGH QUALITY CONTENT IN A DECENTRALISED LEGITIMATE AND FAIR ECOSYSTEM

It will be high time to attract more serious stakeholders. People who make a living out of their digital goods don't have all the tools that blockchain and peer-to-peer technology can provide. Encrypting your files would contribute in a fair ecosystem and transparency off all transactions.

KEY TECHNOLOGIES

What follows is a short description of key technologies, to reinforce the fact that these technologies will be complementary and convergent to our proposition.

PEER-TO-PEER NETWORKING (P2P)

A peer-to-peer (P2P) network [1] consists of local or internet connected computers that exchange information with each other. This information can be found within the peers in the network or can be stored as data in files. Each participant in the network can both be a server and a client, eliminating the need for a central server. With the help of cryptography this happens trustful and without a single point of failure.

CRYPTOGRAPHY

Modern cryptography [2] allows encoding of information in such a way, that it cannot be read without first decoding the information using a special key (Symmetric-key cryptography). Which may differ from the one that is used to encrypt it in the first place (Public-key cryptography). This process of encoding and decoding information involving keys is called encryption and decryption respectively. This process [3] effectively secures information.

BLOCKCHAIN

A blockchain combines peer-to-peer networking and modern cryptography to share a ledger of immutable transactions grouped in blocks which are broadcasted to the network by peers in the network [4]. According to a consensus model, it is determined whose block is the next block in the chain. Cryptography ties it all together by securing the identity of the senders of transactions, linking blocks and ensuring past records cannot be modified. It is an ideal method for keeping record of digital currency and other data that should not be tampered with.

SMART CONTRACTS

A smart contract [5] is a program that enforces the contract that it models through its code. The actual code can be stored in the blockchain by deploying the smart contract to the network. It will then propagate any mutations to its state (data) through the network in the form of a transaction, to be repeated by each node in the network. Smart contract code is restricted to be deterministic; meaning it cannot rely on the computer environment it runs on [6] because the hardware and software may differ for each node (computer) that is connected in the blockchain network. The same outcome for its input parameters, will result even if performed on a different node running a different environment than the receiving node.

DIGITAL RIGHTS MANAGEMENT (DRM)

Digital rights management [7] is a term used to describe access control technologies for restricting the use or memory copying of copyrighted works. such as music, movies, games, applications, art, photos and so forth. Cryptography may be used during streaming playback of media but it requires activating a license code with a licensing server in order to use a program or game; this is also a form of DRM. DRM gets a lot of bad reputation[8], because when done wrong or too strictly it can backfire on legitimate buyers. Sometimes DRM upends being infiltrated by being [9] by individuals who take advantage of your content and use it for their own purposes.

THE PROPOSITION

With blockchain technology and cryptocurrency coming into existence out of peer- to-peer networking meeting modern cryptography; having an incentivized file sharing peer-to-peer network is the next logical step.

We want to take it one step further and leverage this capability to allow users to:

1. Exchange data in a manner that will incentivize participation in the network.
2. Allow users to monetize their content directly through our platform and through the use of blockchain powered digital rights management.

The end result is a peer-to-peer share file platform.

We will create a token called Martian (MAR) that will help us to obtain the development of the platform.

Content that users put on our platform, will be accessible through peer-to-peer file-sharing but is unusable by unlicensed peers [10]. This allows anyone with a computer, storage and an internet connection to assist in distribution of content; effectively adding a separate stakeholder called seeder. This activity is then incentivized through MAR fees earned from sales from the seller's content and transactions on the platform and exchanges.

As the Martian community and network grows there will be a greater need for seeders. The general adoption of the token and further participation will be incentivised on the Martian platform.

Martian Network will make a commitment to stimulating a thriving community with high quality and legitimate content. Providing users with all the tools they need to sell their content, build trust and engage with their audience.

We believe that Martian has the potential to become a fully self-supporting ecosystem through the use of decentralization.

IMPLEMENTATION GOALS

ACSESIBILITY

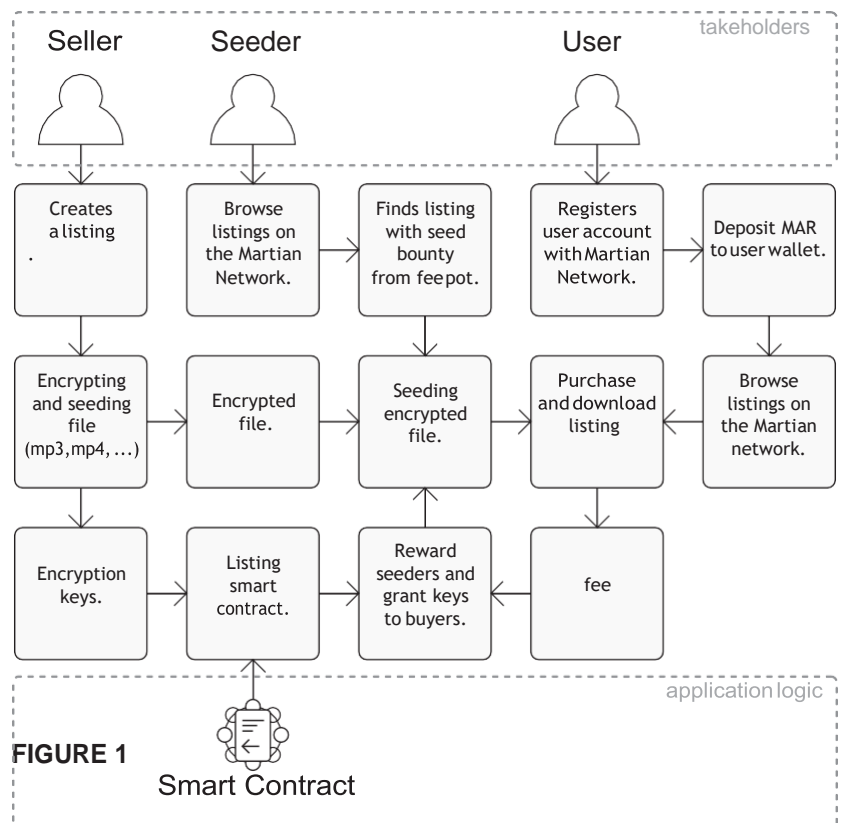
From a user perspective, we would like the application to be easy accessible and user friendly. A requirement to install a desktop application before even viewing the platform, would discourage many average users from visiting the platform and consequently not buying from the platform. We have done research on Progressive Web Apps (PWAs) [11]. Therefore the platform will be accessible through a progressive web application.

USER JOURNEY

A simplified user journey can be seen in in figure 1 highlighting some key features of the application. In the actual user journey each user first requires registration before being able to buy, sell or seed for rewards. The goal here is to keep features like browsing and buying very simple.

USER WALLET

Early versions of the application will require something like Metamask[12] to interact with the blockchain. The goal is to allow the user to deposit withdraw their MAR and review transactions.



USER INFORMATION

As users have come to expect from platforms, their activity and information needs to be readily available for example -overviews of orders, favorite listings, user settings and information. The goal is to design this platform to meet those expectations.

SELLER TOOLS

Sellers will be provided with the tools needed to list and publish their content for sale. The tools provided will depend on the type of data being sold. Depending on the type of data you are selling determines whether you can add a preview

of media, add images, video, description and a category.

Next to the actual tools that enable the user to sell, more serious users will need tools like a sales dashboard, a reviews overview and other overviews. So that they can monitor their performance and help them keep their books.

DIGITAL RIGHTS MANAGEMENT

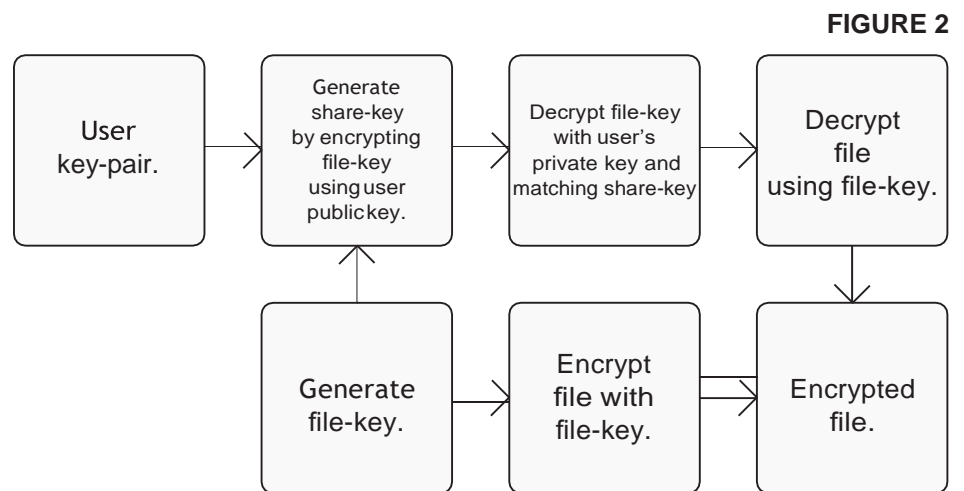
The earliest versions of the application will contain a simple form of DRM. For example: when text is sold that can, depending on the length, be encrypted in a smart contract where only the buyers and seller can read its decrypted contents. This is an example where storage outside of the blockchain is not necessary.

The goal is to expand on this concept and allow storage outside of the blockchain through peer-to-peer file-sharing of encrypted content that is decryptable by buyers as depicted in figure 1. For explanation of how the encryption works, see figure 2. It is usable client-side and has seen real-world applications [13].

Beyond that we would like to implement a peer-to-peer file streaming protocol with added DRM and possibly using the blockchain as a replacement for a license server. This is something we have yet to research.

To summarize these goals:

- Smart contract encrypted text DRM.
- Smart contract RSA encrypted file-key DRM. See figure 2.
- Smart contract license server streaming content DRM.



KEY PLATFORM PAGES

What will also decide how successful the application will be are the key platform pages. This includes the homepage, search feature, listing index pages and the listing detail pages. The goal is to allow the user to find listings easily, browse listings according to categorisation, be properly informed of listings contents and be readily engaged by sellers to result in conversions.

APPLYING TORRENT TECHNOLOGY WITH BLOCKCHAIN

Probably the most innovative and important part of the application will be the recognition of seeders in the file-sharing network to their respective user accounts in order to reward their work. This requires a connection with a torrent client and the blockchain. In other words, there needs to be a proof of storage and proof of transfer that should subsequently be recorded on the blockchain. See figure 1. The goal is to incentivise file-sharing and giving seller content high availability with almost no cost at all.

SEEDING CONTENT

Seeders can choose which content to seed and which content they would like to be rewarded for. A history of past seeding activities rewarded and possibly more meta information such as the provided bandwidth, storage and earnings will also be made available. Previously seeding on a peer-to-peer file-sharing network was more of a matter of civility within file-sharing communities because it was never incentivised.

CONNECTING SELLERS TO SEEDERS

It makes sense to allow sellers to upload directly to the seeder stakeholder and pay a fee for the initial upload and storage required. This way seeders can make themselves immediately available for new listings and even if it isn't a popular listing still be paid upfront. The goal would be to minimize hassle of the initial distribution of sellers content ,this will be an optional feature.

PLAYLISTS

Combining the ability to stream media and having high quality paid content available. Users who have nice collection of media will be able to create playlists.

PAYMENT

With a strong focus on User Experience (UX) [14] our goal will be to make payment an easy process. Ideally to not only be able to pay in MAR token, but eventually in:

- Other tokens through the use of atomic swaps [15] and third-party exchanges.
- Regular currencies through a third-party exchange [16].

Ease of payment will assist with driving adoption. If executed correctly the platform will be a decentralized fledged file sharing platform.

ADVERTISING TOOLS

Sellers will want to engage their users not only by:

1. Delivering great content thus optimizing their listings.
2. Advertisement in key spots throughout Martian Network's decentralized platform. The goal is to provide sellers a lucrative way to place their listings in the spotlight for buyers to see. Sellers will have to compete between each other using MAR token in the process. Advertising sellers pay their MAR to Martian Network, this will help development cost and partially take MAR out of circulation. In early versions of the platform, this will be done via a API. Thereafter, during the design phase further investigations will be performed to enable decentralisation for the future versions.

USE CASES

STREAMING VIDEO/MUSIC

Industry data for streaming videos includes:

1. [17] Revenue from video streaming services (e.g. Netflix, Amazon Prime etc.) amounts to almost US\$20 billion in 2018 and is expected to grow to US\$24 billion by 2022. This doesn't include ad-supported services, pay-per-view offerings or services that require a pay-TV.
2. [18] Revenue from pay-per-view amounts to US\$4 billion in 2018.
3. [19] Figures released today in IFPI's Global Music Report 2018 show total revenues for 2017 were US\$17.3 billion.

This type of content makes an ideal fit in terms of technology for a peer-to-peer file-sharing network given the proper DRM. Users will be able to create their own pay-per-view offerings on our platform. This is ideal for smaller to medium sized productions not willing or able to pay for their own CDN(Connect Delivery Network)[20].

STOCK PHOTOS

Buying and licensing stock photos for use in magazines, advertisements, newspapers, websites to convey emotions, places or things in daily life is a big market. It is projected to reach US\$4 billion by 2020 [21]. Most high-quality stock photo platforms, take a large cut and not in the buyer's favor. Often the purchase of stock photos is via a credit system, where there is a requirement to buy more credits than needed and unused credits have an expiration date.

Martian Network will provide a free platform for stock photos, video and clip art. Sellers will have multiple license options and size variants for their digital goods. Sellers can, more importantly, determine their own price for their work and buyers are not burdened with prepaid credit systems.

Tokenomics

Token issuing (token sale)

Martian aims to organize an Initial Coin Offering (ICO) in order to raise funds. This will assist us in achieving our strategic goals. After the ICO, the company aims to bring in funds globally to further the cause and is also aware of restricted areas.

There will be a total supply of 10.000.000.000 Martian tokens..

Token distribution

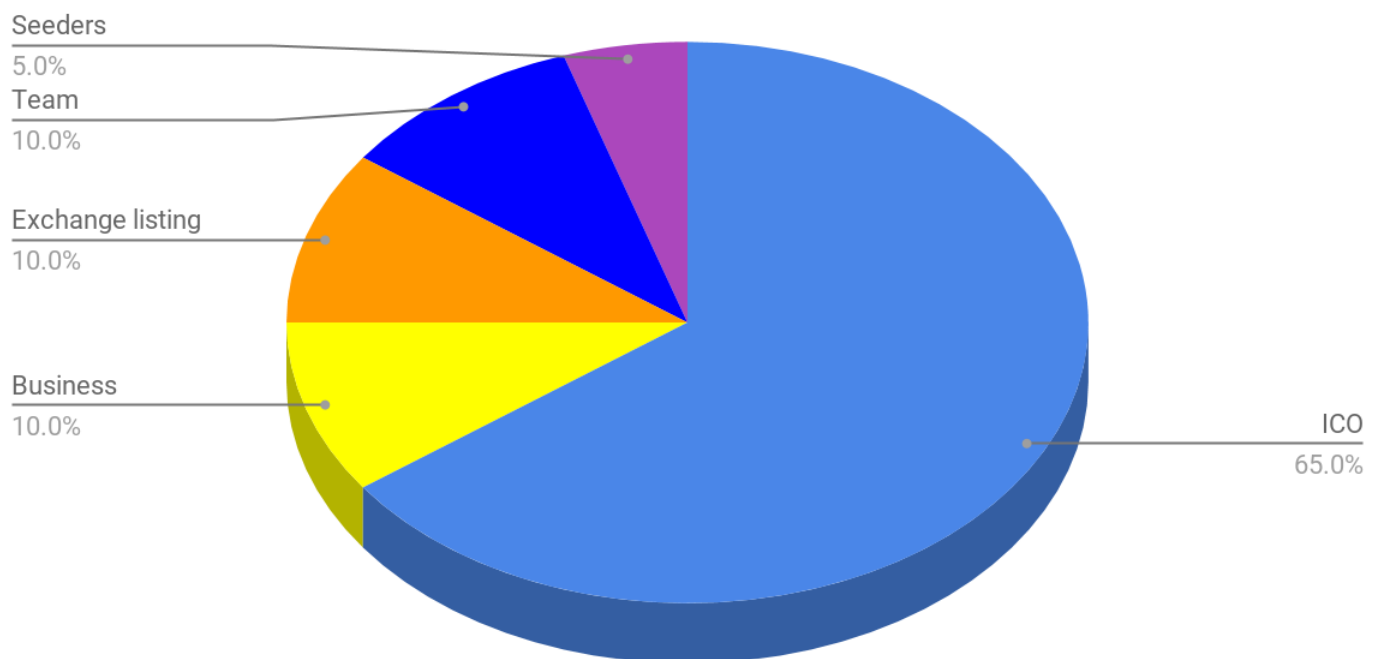
65% ICO

10% Business Development

10% Exchange listing

10% Team

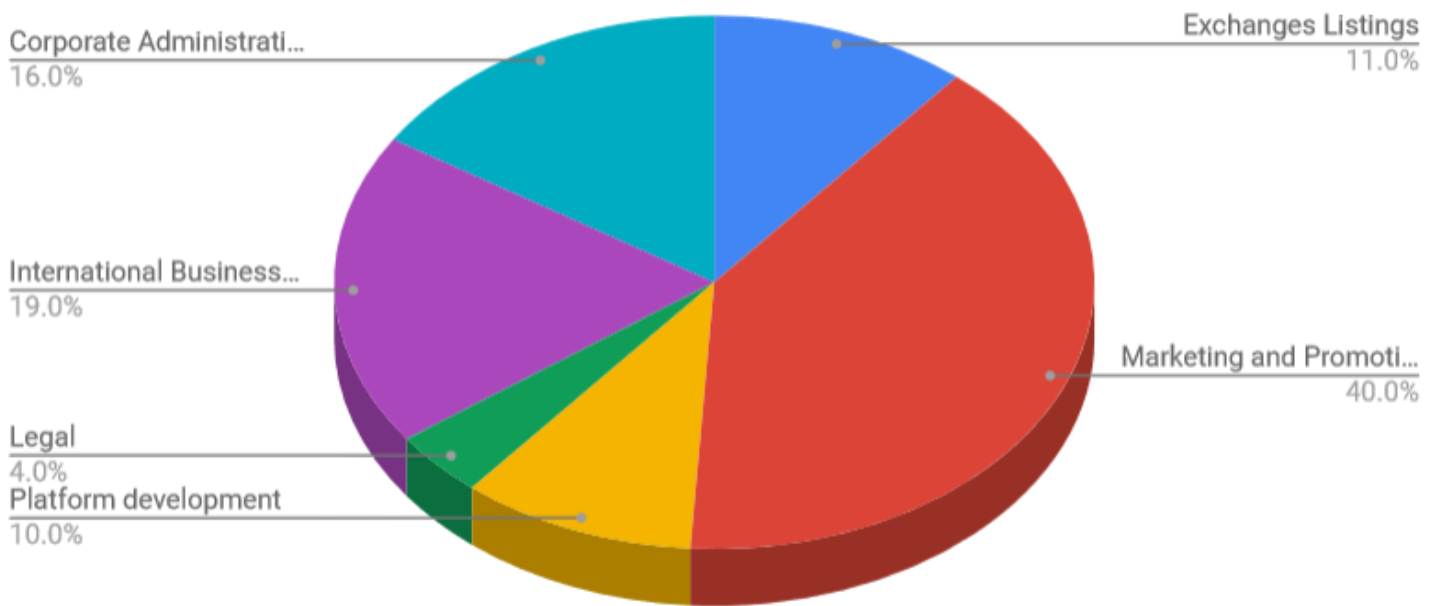
5% Seeders



Allocation of Funds after ICO

- Exchanges Listings 11%
- Marketing and Promotion 40%
- Platform development 16%
- Legal 4%
- International Business Development 19%
- Corporate Administration Expenses 16%

Allocation of funds after ICO



Exchange Listings

Exchange listings are one of the most important aspects of a token's success. Currently listing fees keep increasing. Therefore, the need to apply on exchanges is important for the growth of Martian and for the investors it is beneficial to have a user friendly exchange to trade the Martian token.

Marketing and Promotion

In order to facilitate the popularity of Martian Network globally, the most common forms of advertisement and promotion (Usually social media platforms) will be used. This budget will be used to make Martian as popular as possible among our target groups.

Platform Development

After the ICO, part of the fund will be used to develop the platform and the rest for future development plans of Martian network.

Legal

This part is reserved for legal the side of Martian and will be encountered during this whole project. For instance: should there be new regulations that require company restructuring.

Corporate Administration Expenses

This part is the budget needed to make sure that Martian Network company becomes stable throughout its initial phase until it becomes a successful global platform. Maintaining the platform, to everyday necessities of running a business.

International business development

This will be used for partnerships with different parties or commercial relationship.

ICO Structure

The ICO will be in three phases: Private Sale , Pre ICO and Main ICO

Private Sale: The duration of the Private Sale will be 2 months for angel investors, venture capitalists and private investors with Know Your Customers (KYC).

The Pre ICO: The Pre ICO will be sold to early adopters and private investors who are registered with KYC .

Main ICO will have a bonus structure for every week and will be for all investors with KYC.

The ICO price: The ICO price will be \$0.01

Bonus structure:

Private sale	Pre ICO	Main ICO
40%	30%	1 ^{ste} week 20%
		2 ^{ste} week 15 %
		3 ^e week 10%
		4 ^e week 5 %

COMMUNITY GOALS

Starting with a more centralised setup for our decentralised application, we will build our communities using social media channels. Below we outline some of the goals we wish to achieve with our community and examples of how adding different stakeholders to the ecosystem will contribute to its success.

MODERATION OF SOCIAL CHANNELS

Martian Network will pay attention to people who stand out as natural leaders in the community. Typically these community members are willing to contribute to upholding our community guidelines.

TECHNICAL SUPPORT

Having support for resolution of any technical issues will be very important to our community and company's success. These difficulties can be resolved by members of our development team, moderators and active participants in our community.

CONTENT INCENTIVES

To kickstart our decentralised application, we will research ways to onboard producers of good content and reward them. We will seek partnerships and alliances to improve our position across all types of content depending on the level and phase of development of the decentralised application.

VERIFIED USER ACCOUNTS

Building trust in the community, namely between sellers and buyers can be greatly stimulated with having third-party account verification. The verification can be done based on the following criteria: 1) Know Your Customer (KYC) and verified Chamber of Commerce documentation for businesses. The goal is to provide an extra layer of legitimacy for sellers. The technical implementation would require a smart contract indexing verified sellers that can only be maintained by Martian Network. Every seller should be eligible for verification. Martian Network will charge for this third-party service in MAR.

ROADMAP

Period	Phase	Development
Q3/Q4 2018	Genesis	<ul style="list-style-type: none">• Start Company• Finished Litepaper• Team expansion
Q1 2019	PathFinder	<ul style="list-style-type: none">• Start MVP• Website online• Whitepaper 1.0 release
Q2 2019	John Carter	<ul style="list-style-type: none">• New Logo• New Website launch• Whitepaper 2.0 release
Q2/Q3 2019	Destiny	<ul style="list-style-type: none">• Pre-ICO• Main ICO• MVP testcase
Q4 2019	B.M.F.M.	<ul style="list-style-type: none">• V1 release
Q1 2020	Barsoom	<ul style="list-style-type: none">• V2 release
Q2 2020	24K	<ul style="list-style-type: none">• V3 Release

THE TEAM

Executive Team.



Michael Antwi

Founder & CEO



Felicia Onbekent

CBO

Advisory Team.



Maincode.

UX/UI & Web
Development Agency



Albert Esu

Filmmaker in Nollywood

Operations Team.



Mohammed Alyazji

UX/UI Designer



Ishan Gunawardana

UI/UX Designer



Razvan Uscatu

Frontend Developer



Jude Okagu

Frontend Developer



Mustafa Refaey

Fullstack Web Developer



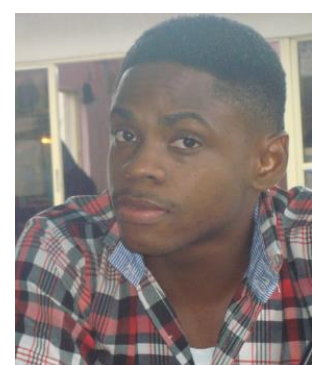
Franklin Ekoh

Backend Developer



Suchita Singh

Backend Developer



Nse Abasi-Etim

Backend Developer



Seif Abaza

Blockchain Developer

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