WHITEPAPER

Version 0.5

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IPSX

IPSX – a decentralized exchange for sharing IPs and a framework for building applications, on top of the existing IPs shared by the community members and data centers.

A smart contract based, blockchain protocols and utility token incentivized mechanism of sharing IPs among actors from all over the world and a framework to build applications that require IPs built in a reliable and open source environment.

DISCLAIMER

This document is for informational purposes only and does not constitute an offer or solicitation to sell shares or securities in IPSX or any related or associated company with IPSX. Any offer or solicitation will be made only by means of a confidential offering memorandum and in full accordance with the terms and conditions of all applicable securities and other laws existing at the moment.

"The highest good, then which there is no higher, is God, and consequently it is immutably good, hence truly eternal and truly immortal."
— Saint Augustine, from the book "De natura boni", circa 405 C.E.

Adapting this sentence to the current social, economic, political and psychological realities of mankind and relating it to the actual technological field we would obtain:
"The highest good, then which there is no higher, is blockchain, and consequently it is an unchangeable good, hence truly eternal and truly immortal."

VISION AND CORE FEATURES

- IPSX is the first truly decentralized IP Sharing Marketplace, which will create a global marketplace for IPs. Combined with flexible tools (SDKs and APIs), to aid entrepreneurs and developers in a fully secured and transparent environment to develop new applications on top of the already existing IPs on the IPSX sharing platform. It will become a framework and a marketplace for new applications that require IPs at their backbone (VPN providers, Data Mining software, web crawling bots, micro tasks, etc.).

- Data is said to be the new resource of our times. At the backbone of Data Mining, large volumes of IPs are required for the actors involved in the mining process to be able to perform tasks. By substantially lowering the price of IPs and solving the IPs accessibility and availability problems, IPSX is aiming to become a key building ecosystem for all the fields that require larger or smaller

volumes of IPs and allowing complex applications from Data Mining and other fields to become more accessible to everyone.

- IPSX connects actors in a peer-to-peer network, enabling both data center owners and individual users, that will be called "providers" to rent IPs to other users, that will be called "requesters". The IPs can be used to complete different tasks requiring one or more IPs from different locations. Today, IP addresses are valuable assets with a low liquidity level due to the fact that there is not a simple solution to share/rent IPs based on a specific list of filters and IP resources are supplied by centralized providers which are constrained by closed networks, proprietary payment systems, and many other restrictions.

- IPSX core built-in feature set is a dedicated Ethereum-based transaction system, which enables direct payments between requesters and providers, solving all the above mentioned problems, increasing the liquidity of the IPs and allowing any actor that has an IP on his internet connected device, to take part into a multi-billion yearly business, that otherwise would be closed to home internet users.

- IPSX function, as the backbone of a distributed market place for IPs, can be considered an Infrastructure-as-a-Service (IaaS), and also a Platform-as-a-Service (PaaS). However, IPSX will reveal its true potential by adding dedicated software integrations to the ecosystem that will be built on top of the existing IPs and that can use the IPs on the IPSX platform. Any interested party is free to create and deploy software to the IPSX marketplace by using the SDKs and APIs that will be provided by the IPSX ecosystem.
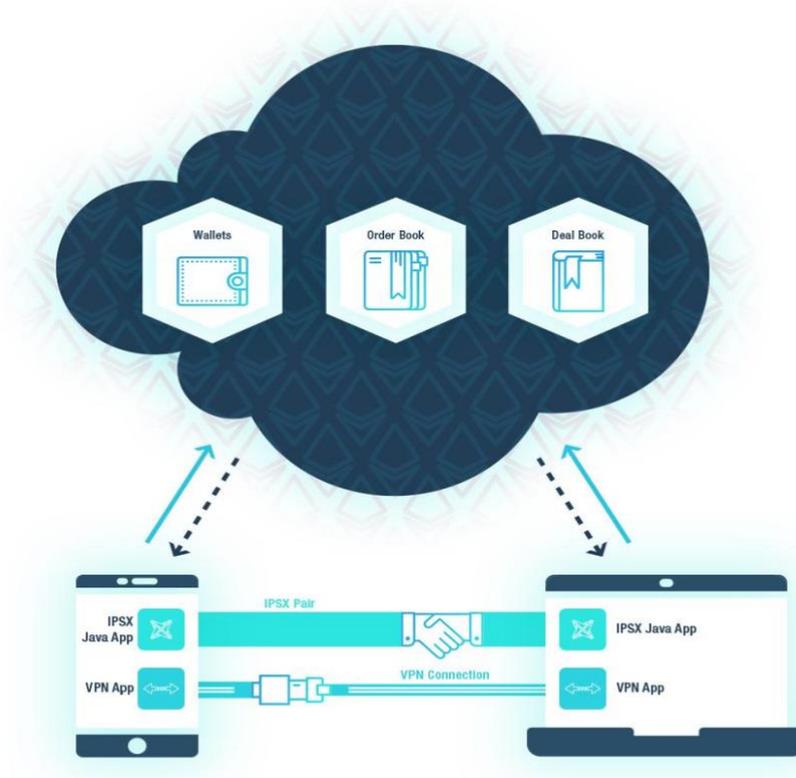

Fig. 1 - IPSX ecosystem representation

BACKGROUND – HOW IT ALL STARTED

In 2011, Sergiu Draganus along with some other friends created GeoRanker (www.georanker.com), a Data Mining Platform focused on Local SEO Reporting instruments, that connects to servers from more than 50.000 different locations and retrieves live ranking data from Google, Yahoo, Bing, Yandex, YouTube in real time.

One of the major activities that followed from GeoRanker initial business model was custom Data Mining for different clients from all over the world and, later on, the business model included also IP sharing and renting, based on requests that came from our different type of business partners.

Some of the major problems encountered during the Data Mining processes, IP rental and IP sharing processes, among others, were low liquidity level, good quality and high prices for IPs (in order to obtain a good price/IP huge volumes of IPs need to be rented or purchased from different IP providers).

Based on the increasing demand of IPs from the GeoRanker platform clients, the impossibility to satisfy all the requests, combined with the blockchain technology and capabilities, the IPSX concept was born in July 2017 and developed initially in multiple brainstorming sessions by the GeoRanker team members. At that time, the team was already composed by multiple blockchain early adopters, evangelists and enthusiasts, so it all came natural in creating the IPSX concept.

INTRODUCTION

There are about 3.5 Bln Internet users and 8.4 Bln IoT devices connected to internet according to Gartner.
What all of them have in common above other things, are:
- high speed CPUs
- memory Chips
- internet Protocol Addresses called IPs.

There is a huge need of remote IP usage which results in a market of over 60 Bln USD with a

16% yearly growth rate.

Remote IP usage is popular among end user consumers to:
- improve privacy and security
- access geo-blocked services / media
- bypass national and corporate restrictions.

Remote IP usage is popular among business providers for building:
- VPN applications
- Data Mining;
- security layers
- other micro tasks.

The success of such a project is already proven by the TOR project among end users, which currently has over 2.5 M daily users.

Main problems of TOR and other similar projects are:
-liabilities - you might have a problem when sharing your IP
-no revenue/ no economy behind the IP sharing/ IP renting processes, which generates the next problem
-bandwidth and Speed Quality
-not usable for business and service providers.

SOLUTION: IP SHARING EXCHANGE (IPSX)

Blockchain based system fully automated, with full clearing of utility tokens associating the price and distribution, based on offer and demand for IPs.

First level:

You will be able to share your device's IP address or as a Data Center to share a full range of unused IPs in order to win real-time IPSX tokens in a safe way. (All connections will be logged in the blockchain).
As a client you would be able to access, in real time, IPs from all around the world and use them for short period of times, as of 5 seconds up to a whole month.

Second level:

We will create a framework and a marketplace and allow any business and service providers to build custom made applications that require large volume of IPs based on our SDK and APIs.
As a VPN provider, you would be able to integrate your system with our SDK to let your clients choose from millions of IPs from all around the world.

IPSX AS AN ECOSYSTEM

The IPSX business model and use cases will fully benefit from all the advantages of the relatively new technological advances. The market for IP Sharing can now be organized to an entirely new system and principles, and moving from centralized and hard solutions to rent/share IPs to a fully decentralized and fully automated system of renting/sharing IPs.

At the moment, the IP sharing market is only accessible to a few large players that understand it and its needs, and that also have the technical solutions to rent/share IPs. With the advancement of the blockchain technology, everyone can take part into a multibillion yearly business and provide their support to a decentralized economy and generate revenue in a safe and easy environment.

ACTUAL PROBLEMS

IP addresses are valuable assets with a low liquidity level due to the fact that there is not a simple solution to share / rent IPs based on a specific list of filters.

Below we will present some projects and solutions that approached this direction so far:

TOR free software project, famous for introducing the idea of Onion Routing to a wider audience. In this system, users download a global list of relays and exit nodes, randomly select from that list, and form onion routes from their selection. Some of the problems it faces:
- high lags because there are no rewards for sharing IPs
- no internal economy
- liabilities (you don't know what actions the users are doing using your IP address).

The Tor Project - https://metrics.torproject.org/
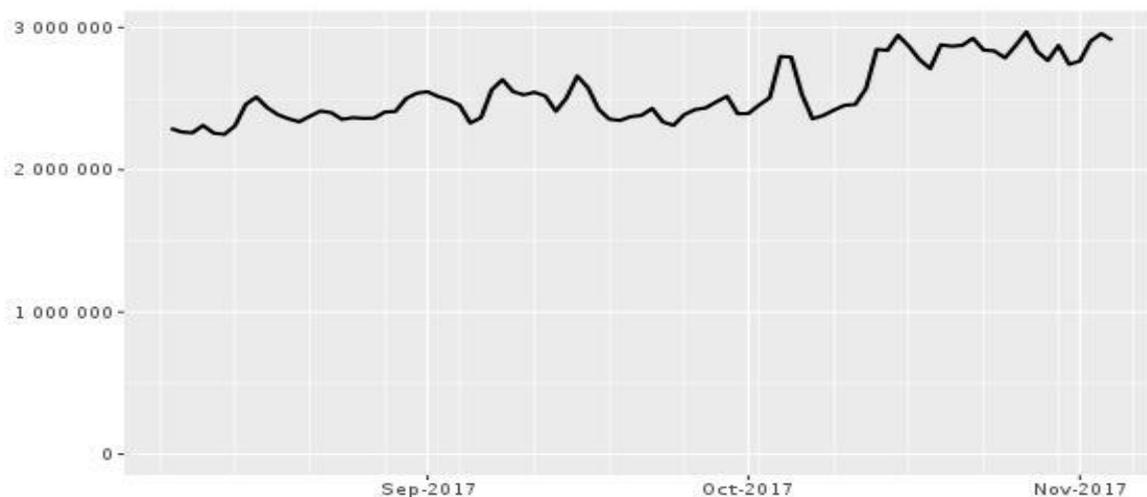
Virtual Private Networks (VPNs) use encryption to securely transport a VPN subscriber's traffic across a larger insecure network. Once the VPN has received the traffic, it is decrypted and retransmitted across a different large insecure network. The retransmission can assist users in circumventing access restrictions imposed by websites, and, to a lesser extent, reduce the tracking of their website browsing habits. Encryption prevents the user's ISP from seeing their traffic. Some of the problems faced by the VPN providers are:
-limited number of IPs from GeoLocations where the demand is high, thus leading to the impossibility for some users to access different services (too many users use the same IP and the IP is banned or restricted)
-the end users are required to pay a full month price even if they need the service for only a couple of minutes or hours.
The process of IP Sharing is difficult from the perspective of matching a specific need with the offering.

Clients for IP sharing have different needs, such as:
- rental Time frame
- number of IPs
- geolocation

- usage scope
- usage protocols http/smtp/VPN etc.
- costs of usage/duration
- contractual Costs / micropayments.

Providers also face different problems:
-B2C - making money by sharing phone/tablet/ISP IP – no technical solution
-finding clients for specific IP / IP classes - marketing issues
-B2B - Difficult to build IP portfolios with different IP classes -
renting for short periods of time
-contractual costs / micropayments
-liabilities.

SOLUTION

The use of BlockChain Technology advantages:
-integrate cross platform clients
-create a marketplace where the request will meet the offer for IP services
-sharing / renting IPs using custom filters time frame / price / GeoLocation / protocol -
manage micropayments using ETH protocols and smart contracts
-record all "transactions" (IP shares owner/ client) in the blockchain.

OUR VISION: IPSX AND WEB 3.0

At the moment, as Internet users, we are being restricted in different ways, we are not allowed to use services and applications due to censorship employed by various groups of interests from all over the world.

All this comes to us in many forms.
Nation states monitor the Internet traffic, so they can construct different profiles of their citizens. In such a context, dissent becomes dangerous, and honest political discord in some places is impossible.

In a very similar way, Internet Service Providers and content providers have become unstoppable and restless in their objective to monitor, track and profile every user across the Internet. The daily Internet activity, communications and behavior of every user are gathered and sold to advertisers and basically anyone willing to buy them. Such transactions occur with little to no conscious consent from users and with a complete disregard and lack of respect for any notion of personal privacy.
Access to content is being restricted by its content providers to certain areas due to Intellectual Property limitations or purely because of low valuation of users from some particular locations. We don't condemn in anyway the current system and its position. However, in the actual context and the new economy model that rises, we believe that this system is old and unfair to many actors inside of it, and the time to change is NOW.

We believe that the future of economy and Internet will be a fully distributed network, enabling users and actors from all sectors to securely and directly exchange content, without sharing it with corporations or other middlemen and 3rd party service providers.

In this direction, IPSX allows all the actors to participate in the internal economy of the ecosystem and provides a way of supporting the decentralized vision, shared economy and generating revenues. Of course, we will support and encourage the development of other technologies, many of which have gained significant traction in recent years.

Better data-sharing technologies are necessary, and in order to allow data sharing in an open and censorship free environment, the IPs are required, as the backbone of Internet protocols. Taking into account the ongoing development of IPFS, Swarm and other solutions, the time for fully decentralization seems to be within reach.

Eventually, the blockchain networks will become more scalable, more efficient, and will include a fully functional network of micropayment channels. The IoT devices will become easier to integrate and communicate with, and a larger volume of IPs will be available, thus allowing free internet. This concept of free internet we not only mean it in terms of upfront payment, but also free of all the restrictions, censorships, privacy thieves and sensitive, personal information data buyers.

IPSX will provide the easiest way for users from all over the world to help the Internet in becoming a fully decentralized and free of the actual less fair interests of different actors, by sharing IPs in an easy and totally transparent way among worldwide users and providing the fuel of truly decentralization for the Internet.
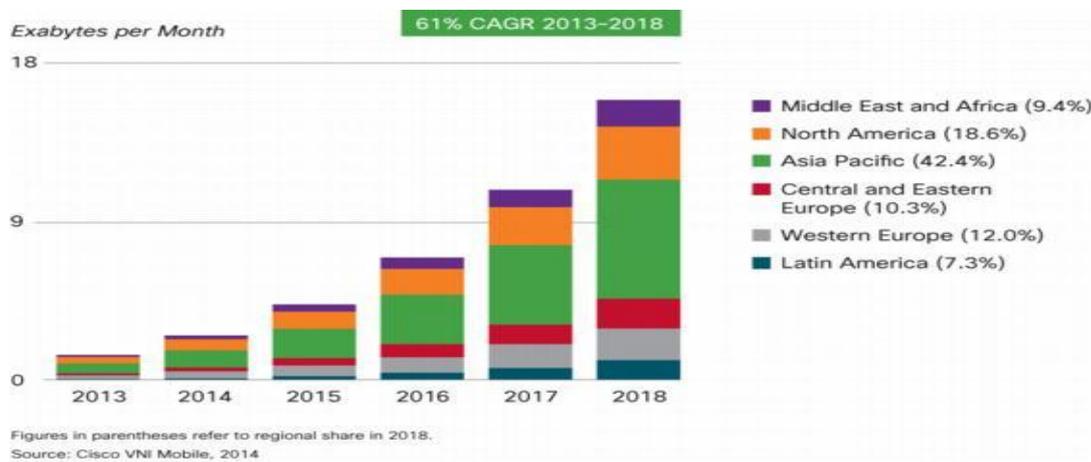

Fig. 3 - internet traffic/month by area location

TECHNICAL APPROACH

In this section the technical approach will be presented. However, the more detailed technical specifications will be released on design documentation that is currently under construction by the technical team.

<u>Actors</u>

An actor of the IPSX system is represented by a trio which consists of:
- a human/bot administrator of the device that uses the IPSX system for offering or requesting IPs. The lender of the IP is called "provider" and the user of the IP is called "requester";
- a Java Application/API that acts as an interface with the IPSX system. The JAVA application will be built for all platforms and mobile devices and will run as a client on the end user's (actor) device;
- a third-party VPN Application which is used to instantiate VPN connections.

According to his role in instance, a user is of one of the two types:
- "Provider" User = a user who provides an IP or list of IPs by placing offer orders and by instantiating a VPN server once a deal is done.
- "Requester" User = a user who benefits from an IP or list of IPs by placing request orders and by instantiating a VPN client once a deal is done.

The identification data of a user consists of its unique IPSX wallet address. In other words, a user is represented in the system by his IPSX wallet address.

The IPSX utility token will be a standard ERC20 token issued on ethereum blockchain, so any ethereum account can be used as an identification data (ID).

<u>Structure description: system layers:</u>

IPSX system operates on three technological layers:
- On the Ethereum Layer, the Centralizer Smart Contracts will manage the wallets, the profiles, the token balances. Also, we are analyzing the micro Raiden protocol for micropayments at this layer.
- On the Application Layer, the IPSX Java App will implement the user interface and the communication/synchronization with the Centralizer Smart Contract and the VPN Application and it will also arrange the matching process and the deals.

Moreover, this IPSX Java App will ensure the management of the Service Layer by constant communication on the IPSX pair channel between the partners of the deal.
- On the Service Layer, the VPN App is a third-party application used to instantiate VPN connections between the actors.

Logical components of the Centralizer Smart Contract:

WALLET (ID) manages the IPSX token balance of the users and has a list of records with the following structure:
- Id = the IPSX wallet address of the user
- Balance = the number of IPSX user-owned utility tokens that are available to his use for placing request orders or just for simple transfers
- Reserved = the number of IPSX user-owned tokens that are reserved for ongoing deals and future payments and that are not available to him at a defined moment for any other operations.

JAVA application components:

PROFILES - manages the user profiles and has a list of records with the following structure:
- Id = the IPSX wallet address of the user
- Info = is a complex data structure that stores information about the user, including his rating and general preferences/ settings/ criteria/ history.

ORDER BOOK - manages the offer/request orders received from users via the IPSX Java App. It has two main components, namely the Offer Orders List (OOL) and the Request Orders List (ROL). The offer orders received from the providers will be recorded in the OOL and the request orders received from the requesters will be recorded in the ROL. Both OOL and ROL have the following structure as lists of records:
- Id = the IPSX wallet address of the user who placed the order
- Order = the details of the order.

DEAL BOOK - manages the deals between users. More precisely, it manages the deals between a provider who placed an offer order and a requester who placed a request offer in the context of a previously identified matching between these orders. It has a list of records with the following structure:
- ProviderId = the IPSX wallet address of the user who placed the offer order and will play the role of a provider on the Service Level (in other words, the IPSX wallet address of the "Provider" User)
- RequesterId = the IPSX wallet address of the user who placed the request order and will play the role of a requester on the Service Level (in other words, the IPSX wallet address of the "Requester" User)
- Deal = the details of the deal i.e. the combined data from the offer order and request order
- Status = the status of the deal. This status will be changed during the life cycle of the deal according to the status/events received from the IPSX Java Apps of the actors involved in that deal, based on an agreement protocol described in the next sections.

MATCHING - a function that identifies matches between offer orders and request orders and instantiates a new deal that will be further placed in the DEAL BOOK, while asking the ORDER BOOK to eliminate those orders from its offer/request list.

AGREEMENT PROTOCOL IMPLEMENTATION

This is a function that generates a deal status based on the provider status and requester status received (or automatically assigned in special cases) from the actors of a deal.

The process description is presented in the design documentation which is currently under construction and will be released on a future date.

IPSX UTILITY TOKEN (IPSX)

IPSX is a utility token based on the Ethereum technology, issued on ERC20 protocol and it will be used as a unit of exchange between the actors of the IPSX ecosystem.

Also, IPSX will be used for commission payments to the platform for all the details that are sealed inside the IPSX ecosystem.

The general conditions for using IPSX will be set in the terms and conditions that are currently in process of creation and review by the legal and technical departments of the IPSX team.

The supply of IPSX utility tokens will be limited to the pool of tokens created during project funding period and no other tokens will be issued on an advanced stage of the IPSX project life cycle.

IPSX utility token creation

The IPSX is a token on Ethereum platform. Its design follows widely adopted token implementation standards. This makes it easy to manage using existing solutions including Ethereum Wallet.

Maximum number of tokens created during the crowdfunding period (updated on 29th Jan 2018):

- Total: 1 800 000 000 (100%);
- Funding participants: 900 000 000 (50%);
- Incentives for early adopters and strategic partners 495 000 000 (27.5%);
- Bounty campaign 45 000 000 (2.5%);
- Team and strategic partners 360 000 000 (20%).

Token distribution

Team, Advisors,
20.0%

Bounty
2.5%

Incentives, Early
27.5%

Sold to the community
50.0%
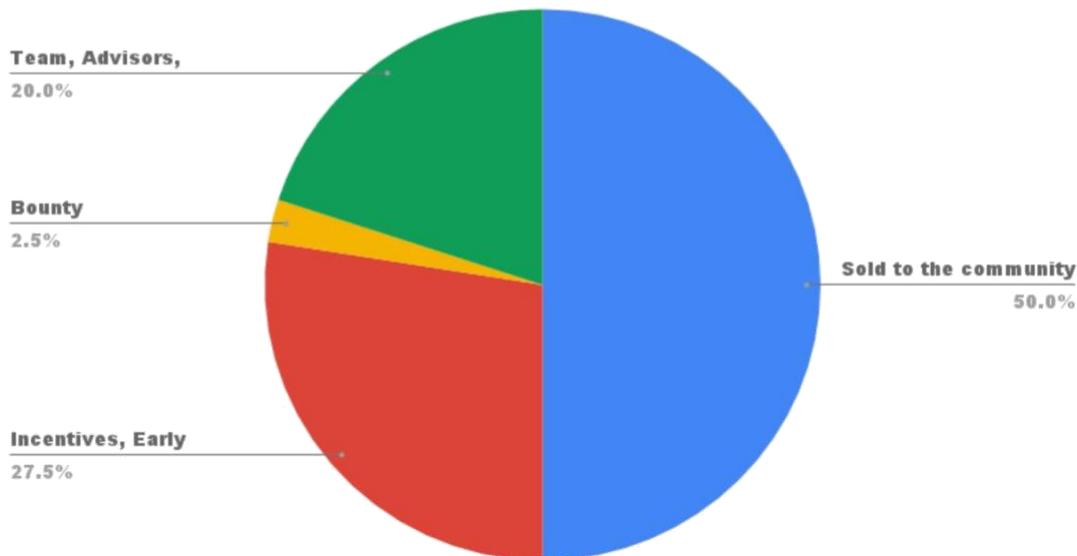
Sending 1 ether to the IPSX smart contract will create a predefined number of IPSX tokens based on the ETH hard cap that will be set before token generation event.
No token creation, minting or mining after the funding period will be possible.
Tokens will be transferable once the funding is successfully completed (this needs to be agreed on a future state).

Any tokens that will not be distributed during the funding period will be later on distributed to the contributors proportionally to the amount contributed during the funding period.

FUNDING PERIOD

The funding period is the entire timeline used by the IPSX management team to secure funds for the development of the IPSX ecosystem.
The funding period will be composed from multiple stages as follows:

1.Initial investment – this phase has already taken place and we, the founders of the IPSX project, were the investors of this phase. We will describe on the roadmap how we used the funds from this funding stage.

2.Private investment – this phase will start on November and will be open only to private and accredited investors and also to strategic business partners.
There will be a minimum investment for this phase that will be revealed on a later stage and this phase will be conducted on private and individual sessions.

3.Private pre-sale – this phase will be opened to early community members that will be willing and able to pass a full KYC/AML process. Also, we are analyzing different partnerships with presale platforms.

4.Public crowdsale – this is a very delicate phase and we will analyze it very seriously before releasing any information about it.

As most of you know, the legal aspect is very important and sensitive on this subject and we do not want to treat this in an easy and irresponsible way.

We will release an official position of the company on a blog post in the upcoming period.

USE OF FUNDS

Funds raised during the funding period will be used solely for the development and benefit of the IPSX Ecosystem.

A more detailed distribution of the funds will be released in the upcoming days, along with the new version (0.2) of the whitepaper draft, after a first round of reviews.

Roadmap

As was said earlier, the first stage of funding already took place and the team members were the first ones to fund the project.

Below is a description of the activities that took place so far and the prevision of the future milestones:

August 2017
- the details of the project were discussed between the management team and advisors.

September 2017
- the work on the concept started, the first draft of the ip.sx website was deployed, and design and first developments of the website were implemented.

Also in September, the legal structure was defined, and the decision to establish a new company in Switzerland, Zug area was taken by the management of the team. All the operations will be conducted from the legal entity from Zug.

October 2017
- the developing team started working on the initial concept and design documentation;
- the first community manager joined the team (welcome Daniel Paraschiv)
- a new office was opened in Bucharest, Romania for the technical and development departments
- a new office is in course of being opened in Switzerland, Zurich.

November 2017
- the funding period starts
- the legal team is analyzing the possibilities and options of running a complete legal and fully compliant public crowdsale
- the website will be finalized, white paper published and community engagement will start.

Q1 2018
- the JAVA applications development for different platform starts.

Future steps will be detailed on the next version of the whitepaper, as at the moment we do not have a complete vision of the development life cycle.

THE TEAM

The core team can be seen on the Team section of the IPSX web site: https://www.ip.sx/.

Also, the public LinkedIn profiles of all the team members can be accessed from the IPSX website.
The team members, as well as the relationship and history between them, will be presented in a blog post that will be published in the upcoming days.

The team is kindly asking all the interested community members to join the Telegram channel for keeping the pace with the project evolution and being up to date with future announcements at: https://t.me/IPExchange

Thank you for taking the time to read these details! Please feel free to drop us a feedback on george@ip.sx.

We will be happy to reply!

George Bunea

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Bucharest, 31 October 2017