[DARF] Chain - the ERP solution for tokenomy powered by the blockchain technology

[DARF] Chain is the robust state of the art technology integrated solution for business planning, resource management, accounting and analysis resources. It is implemented on the modern and the most promising blockchain software platform and utilizes the semantic constructor of Smart-contracts to allow projects and communities financing and development.

www.darfchain.com

https://www.facebook.com/DARFChain/
https://twitter.com/DARFChain
https://www.reddit.com/user/DARFChain/

Russian white paper:
https://docs.google.com/document/d/1XU50mN0hHecy32qLKCaaTGiTlA6HOG_-ZRJdS4WrBN8/edit#

Bitcointalk: https://bitcointalk.org/index.php?topic=1945413
Rus BTT: https://bitcointalk.org/index.php?topic=1913539

"Dar" means "gift" in Russian
"Darf" mean "may & should" in German

Abstract

When the internet came out, it was hard to imagine applications such as Google or Facebook. We think we are at a similar stage now, with the potential to create new financial applications and products down the line that we probably would not even recognise today. The development of distributed ledger technology (blockchain) created a new economic situation in the world, a number of fundamentally new opportunities and associated risks.

Crowdinvestment in digital currencies, in the form of Initial Coin Offering / Token emission event (ICO), is currently booming, with monthly investments in ICO projects exceeding $ 100 million.

A simple extrapolation suggests that the inaccessibility of traditional investments for start-ups and small and medium-sized businesses, inscribed only in the economy of their region, especially the

underfunded "economic periphery areas", will make ICO ultimately an important if not the main way to raise funds for them, that Already led to the appearance of thousands (and in the future, perhaps millions) of tokens of enterprises and private specialists. This will create a huge secondary market for private debt, where it will be possible to directly exchange tokens, without the use of "bank" money. A new economic reality is emerging before our eyes - a tokenomics.

Tokenomics - is a new type of economy of the 21st century, where every subject, using blockchain technology, can create their own tokens - digital "money", debt obligations and pay for goods and services. In tokenomics, any private money-tokens, secured by assets of trust and quality, become full participants in commodity-money circulation.

However, now ICO investors can count only on honesty and professionalism of entrepreneurs and also on the reputation of escrow in project management issues, because there are as yet no developed tools for monitoring projects, as in the "old" economy. If the ICO will become massive, then such control will become completely ineffective.

The mission of the DARFChain is the *development of the ecosystem of the Tokenomics.*

Project Objectives:

Step 1. Create an ERP system for ICO investors and entrepreneurs using blockchain as a transport medium and an unchanged storage environment to ensure transparency of ICO projects and automatic generation of analytical reports on all the investor / consumer parameters of the issuer's specific token.

Step 2. Based on the created system and other ERP-systems, to develop and develop elements of the ecosystem of the tokenomics - built-in ERP distributed through both multicurrency and multi-token accounting, as well as a token trading platform equipped with AI bots that optimize trade transactions, Including those involving other tokens traded on exchanges.

Solved problems: The development of tokenomics will require accounting of all transactions not only in the form of a general ledger, as in purses, but also in the sections of analytical accounting, generation of tax reporting, multidimensional OLAP analysis. At the same time, the very possibilities of blockchain technology - distributed accounting, the unchangeability of data in the blockchain, the rapid release of tokens, the possibility of direct settlements in them-create new business opportunities that are transparent to partners, investors and customers. Issue and exchange of tokens allow to solve questions of financing of projects with minimization of attraction of "bank" money (ie expressed in currencies of various countries) money resources.

Thus, our project of the distributed ERP-system DARFChain will help not only solve the problem of transparency of ICO processes and post-ICO projects, but also lay the foundations of the digital economy ecosystem - "tokenomics."

Contents

Why are we doing this?

What are the advantages of blockchain connection technology with ERP-system?

1. Accounting in crowdprojects and control at the ICO and post-ICO stage.

*S*oftware complexes of Enterprise Resource Planning (ERP) acquired modern functionality as early as the beginning of the 2000s. Then the Material /Manufacturing Requirements Planning (MRPI/MRPII) material management system, that work consisted in planning the distribution of material and financial resources, as well as production capacity, was supplemented with Customer Relationship Management (CRM), Product Lifecycle Management, (PLM) and supply chain management (SCM). The main advantage of the ERP-system was the possibility of using a single model of the transaction system, which can be used for basic operations and all current business processes in the organization, with any functional and territorial disconnection of production, financial, communication procedures. Regardless of the reason for their occurrence and origin, the system enables you to integrate data and reports on all operations performed into a common information base for subsequent system processing and obtaining generalized results in real time.

The world market of ERP-systems today is represented by giants - SAP (19%) Microsoft Dynamics (16%) Oracle and Infor (13%) - and various free and shareware systems like ERPNext, OpenBravo, Odoo, iDempiere and others. In total there are about 100 most advanced ERP systems in the world. It can be argued that today, the conduct of any sustainable business that needs to synchronize the activities of various units that are divided geographically or production (R & D, logistics, procurement, storage, personnel, intellectual property, etc.) is impossible without accounting, analysis and different levels Readiness of solutions, which are provided to the owners and management of ERP-system.

The emergence of the "digital economy", one of the symbols of which has become a blockchain, on the one hand, makes investing processes widely available for crypto currency owners, on the other hand, allow to take into account and even capitalize mutual trust between counterparties, making coordination between the company, its investors and clients as much as possible Symmetric and drastically reducing the market transaction costs, of which Nobel Laureate R. Coase spoke in his "Theory of the Firm." However, the famous Coase theorem did not cease to work, but, on the contrary, it confirmed its validity. With the advent of the capabilities of the distributed registry providing the power of attorney and the unchangeability of information, as well as smart contracts ensuring the automatic fulfillment of investment and consumer obligations, the crowdinvestor and the

user can be organically included in the accounting and analytical processes of the borrowing company.

Transition to a distributed ERP system in to a blockchain system will make complex business indicators available to all participants in the market chain, while each will have its own level of access necessary to implement multilateral liability for transactions. For crowdinvestors, participating in the purchase of tokens of those startups, which dense mass recently go to the ICO, the presence of such a control mechanism in the code of the token, will indicate the readiness of the "digital" borrower to the necessary external control, which immediately dramatically increases the level of confidence in crowdinvesting, allowing them to raise significant funds in the ICO process. For example, the construction of a plant that produces either innovative products or uses innovative technology will attract a lot more investors if it puts in its tokens smart contracts that are executed when certain business indicators are fixed by the ERP system. And the transparency of its business provided by the enterprise, for example from the FMCG sphere, through the ERP code in the blockchain, will allow planning production, purchases and sales at a convenient time for all and in a suitable form, which means that the most competitive enterprises will be closer to the consumer and the investor.

Obviously, the realities of the digital economy will hit the business of audit advisers hard, making it also change, most likely in the very near future. Perhaps, auditors of the 21st century will become serious competitors of banks in the struggle for the right to provide escrow services in the ICO market. The banks themselves will have to change or die. The latter is obvious if one takes into account that bank lending in the digital economy is replaced by consumer lending in the form of pre-order payment, especially when the buyer sees where and what, according to the terms of the smart contract, its funds go. Therefore, banks will only have to enter into the token exchange and become exchange-accounting hubs that accumulate primarily liquidity

Therefore, blockchain-platforms with a distributed ERP-system in them become tools of the actual "digital economy", or tokenomics. A system that allows businesses and consumers of its products / services to unite digital and non-digital assets in their activities without compromising the accepted accounting standard, and there is an ERP system on the blockchain. Thanks to it every "digital" entrepreneur, depending on the place in it (client / buyer or businessman / co-operator / enterprise), receives at his disposal a distributed calculation and analytical hub, which, according to the user's chosen settings, has all the necessary information about the growth of the start-up or the current development of the enterprise, which is embedded in the tokens listed on the exchanges, best take into account own assets and redistribute them depending on the demand (course) of digital assets - tokens, each x market participants.

2. Overcoming the chronic scarcity and uneven distribution of finance

It is already obvious that the world boom of ICO, which is observed right now, has its source of a monetary (credit) deficit, hanging over the enterprises of the real sector, especially local (regional or municipal) value, but also over many start-ups working in a saturated supersaturated competitive environment. Conventionally, there is a surplus on the world scale today, but they are distributed so unevenly that they rapidly lose their power and importance as an investment tool.

In the era of the dominance of the credit and financial sector of the economy over production sector, the real investment climate is determined by those who produce and control the main "goods" of our

time - banks, investment companies, trust funds. In the sphere of production of goods and services, the main market regulator, the price factor of the supply-demand, ceases to function. At the same time, raw materials, energy and real estate are no exceptions to this rule - they simply lose their liquidity after the consumer sector. In these conditions, the management of enterprises inevitably began to focus not on production, not on customers, but on finance interests. For the current accounting system, it is not just profit that is important, but the amount of money that you can pump through the company. Therefore, business valuation shifted to standard indicators of financial reports, such as EBITDA and others. To assess the real stability and reliability of the business when buying it, signing a partnership contract or acquaintance with its products, special procedures like due diligence, a comprehensive (and not just a financial) audit, etc. are required. These same problems are now fully apparent in the venture business.

Moreover, the growth and strengthening of globalism have made financial and credit institutions, in fact, the leading enterprises of the economy, producing universal instruments of exchange, traditionally called "money." However, the money that they distribute among market participants has long been not money in the full sense of the word. The chain begins with the United States Department of the Treasury, which issues a promissory note to the Federal Reserve System, which it actually reprinted as a "dollar" and puts it into finance circulation. Hence, other states that tied their currencies to dollar reserves, in turn, launch in their countries in circulation banknotes (of course, not only paper, but also electronic) of central banks, which turn out to be the same debt obligations.

When in 1971 the US refused to bind the dollar to the gold standard, two economists almost simultaneously - B. Kline in 1974 in the article "The Competitive Supply of Money" and the future Nobel laureate F. von Hayek in 1975 In the book "Denationalization of Money" (or in translations - "Private Money") - put forward the idea of so-called private currencies. Adherents of "free money", naturally, favored competition of private banking institutions, and on the international arena, which in the conditions of total dominance of petrodollar at the time should "naturally" lead to the destruction of other financial systems, namely, the socialist block and the Third World countries . Frankly speaking, the idea of private currencies is not at all new and in principle is very similar to the history of money circulation in Europe in the 17th and 19th centuries, when the first private issuing banks were born and developed, but not on the principles of modern "partial reservation". Then, in addition to issuing banknotes with gold / silver collateral, banks willingly lent to the account of "real bills" (deferred trade transactions) or land pledge.

Back in the 20th century, a variety of local currencies, existing both in paper and electronic, became the answer to the iron tread of globalization, and at the present time - purely electronic form. Among them is the Swiss WIR (since 1934), the Canadian LETS (a non-commercial, no-exchange network for the exchange of services and goods that does not need any state currency), SARDEX (launched in 2010 as a paperless system for accounting and clearing debts of local enterprises) and others. In the form of cryptocoins Berkshires, Bristol and Liverpool local pounds are now known. In general, as of early 2016, as Forbes claimed, the world used up to 1500 local currencies with an annual turnover of $ 700 million, while in Europe only the registered local currencies officially numbered 289.

Nevertheless, the idea of private currencies in the conditions of the global monetary deficit continued to evolve naturally and eventually descended to the "bottom" level, which was the expression of the ICO of individual enterprises, start-ups and projects. By creating PayPal, Peter Thiel considered one of the missions of this payment system to free people from developing countries from devaluation of national currencies by means of the possibility of withdrawing funds into global electronic accounts denominated in hard currencies. Tokens issued by market participants have their promissory notes

("digital bills") that are protected by certain smart contracts that are executed when the agreed conditions come. From the economic point of view, the exchange of public debt, especially in the face of increasingly dubious democratic control over their execution, is no better than an exchange of corporate or personal economic obligations. At the same time, existing technologies allow implementing trusted transactions, which can be completed only after they are certified by a third trusted party. In addition to the current reserve digital currencies (bitcoin, ether, wave), any external liquid assets (reserve fiat currencies, gold, etc.) that guarantee its external exchange with the pre-digital economy can be the core of the local or sectoral tokenomics.

Today, every economic entity, through the release, exchange and quotation of its production obligations as tokens, can be included in the n-dimensional transaction network, where n is the available number of levels of digital derivatives and / or hypertransactions. All this becomes possible due to the fulfillment of the main condition - removal of restrictions on the emission of individual (corporate) liabilities and financial and technological support for their implementation, including semantic smart contracts. The presence of an ERP-system on a block of flats will help not only ensure proper accounting of the exchange rate interaction of tens and hundreds of thousands of tokens, but will also provide the basis for the future of optimal legal regulation of the provision and execution of digital obligations.

In addition, the ERP system on the blockchain will by default contain a module that will be needed by all who want to remain an honest taxpayer. With its help it will be possible not only to translate the existing crypto currency into a phyto for the reporting tax period, but also to organize tax reporting in accordance with the legislation of a specific country. Therefore, initially this will be (apart from offshore) jurisdiction of the European Union, Britain, Russia and BRICS countries. Next, the US, China, other Latin American countries, in addition to Brazil, etc. Of course, those who love the thrill will be able to disable this module, but in this case DARFChain takes no responsibility for your future. :)

Usecases of tokenomics. A few examples from the nearest bright future :),or who would benefit from our project

We assume that the main interest of the Tokenomics is the inhabitants of the "global village", where there is a deficit of settlement funds, while megacities are bursting with money. These are the financial towns, villages,   township. The main actors there are local communities, sodality, cooperatives, small family enterprises. Throughout the world, according to UN studies, this is up to 500 million subjects in the World. The peculiarity of such communities is close social, human relations, "everyone knows each other", which allows to rely on trust and reputation mechanisms.

1. Sh., the Farmer, unable to take a loan from a bank on bail, arranging bankers, let their tokens on the security of his own products. Thanks to a smart contracts constructor, he was able to release both General investment tokens, and tokens for each unit of the commodity (say, 10 kg) of produced meat, milk, poultry, fish, grains, vegetables and fruits. A bit of meat&poultry&fish tokens the local mechanic B, which runs a small machine and tractor station, bought in exchange for his own digital currency - because the farmer Sh often turns to him for help in the cultivation of the land, harvesting and transportation of the crop. Artificial intelligence, that helps to design smart contracts, according to

pre-imposed deadlines will calculate the optimum conditions of the contract (shipment and delivery of the product). And as the fame of the farmer Sh. already booming in the country, it is necessary to expand the business - and the mechanic B. for quite fiat money acquired General investment farm tokens. Neither the farmer nor the mechanic does not fear the tax service - because their relationship is formalized through a cooperative scheme, as the exchange of shares.

2. enthusiasts from "N-district" of "M-region" in the past year were united in a single network (association) of producers, including dozens of legal entities and hundreds of individual entrepreneurs, as well as individual citizens. This became possible when each network participant has been decorated as the member of all existing co-operative organizations, and the Association itself - industrial, agricultural, consumer, credit. Each cooperative has issued tokens for their members by mutual contributions and separately - under the common property of the cooperative. ERP-System at blockchain takes into account all transactions between members of the network, distributing them to various cooperatives duly between the shares of counterparties shares. Now "N-district" area enthusiasts are going to visit the warm Spain to extend their experience on local cooperatives, as this movement has gained momentum in Russia.

3. Online gaming clan from the game "World of Warcraft" was not only able to issue their own tokens to its members to pay them with friendly clans for services and virtual "goods", but also get a great tool to account for their loot.

4. Many of the small towns, ready to attract investment funds and / or tourist flows, can now quickly produce its own tokens - digital local "currency" - because of the built-in computational and analytical system to establish economic cooperation among the local business community will be even easier.

5. International organizations struggling with the consequences of various disasters will now be able to fully take into account the supply and distribution of the necessary support equipment (primarily food products and drinking water) without fear that humanitarian aid will be plundered and / or sold out[1].

In this case, **the target** audience to be addressed - the entrepreneurs, cooperatives, individuals - will be able to conduct business with almost no bank loans, cash (be able to issue their own), without the use of smart cards, POS terminals - having the presence of only a computer, a smartphone and mobile phones (for buyers).

If you count the number of small businesses (up to 120 million people in the world), cooperative members (about 250 million people in the world), a community, including the online game (up to 50 million people in the world), the amount of ERP transaction record market in blockchain, with 10% of those involving people with a minimum rate of 10 transactions per day will give more than 150 billion transactions a year. With the cost of a single transaction, for example, in the Waves blockchain to 0,001 waves (~ $ 0,0062 at the rate of 5,12 USD / Waves at June 2017), a total amount of about $ 1 billion a year, and when recording in blockchain Bitcoin - up to 300 billion . per year. (average price of transaction 75,000 Satoshi 2500 at the rate of USD / BTC in June 2017). Our commission system is 20% of the value of transactions.

Conclusion about advantages using ERP-system on blockchain:

- *allows very fast to solve in practice serious social problems such as under-funding of the economies of the communities / local economies, inefficiency intermediary transactions pre-*

digital economy, the direct and indirect corruption and embezzlement of charitable, private and even the budget funds;

-   this is a distributed accounting system - a program for the PC that allows for a distributed project management accounting in the required sections, as well as mobile application partner (purse), which makes it possible to receive and send payments, conduct primary accounting, etc. - data exchange infrastructure which are existing public blockchain or their proprietary counterparts;

-   as accounting and analytical system, may implement economic reports to assess the performance of the project budget, to see the real-time flow of funds, etc. - all provide traditional accounting accounting software - but now to have access to the relevant rows of blockchain of partners and investors;

-   includes the ability to conduct analytical account in the various sections to analysts, print standard forms (in the international format of the project - for different countries), balance information;

-   in the original option implement basic operations required for fiscal reporting.

Why did we decide that our product is needed?

Our own experience in business and government institutions, analytical research and monitoring in the field of tokenization local economies, as well as the global co-operative movement, colleagues polls, studies of the World Bank's Participatory budgeting has been used for the analysis of product demand.

DARFChain competitive advantages:

1.   Distributed accounting without infrastructure investments;

2.   the establishment of an environment of openness and trust between the project participants;

3. an opportunity not only to keep a record, but also implement financial transactions (from transfer of tokens between the parties on account or as wages, to issue its token- "shares" and trading of tokens);

4.   Freemium model at the start, no need to buy the software.

What is the legal scheme for issuing tokens for normal business?

For many countries, the actual project design scheme in the form of a cooperative, then tokens are issued as the shares of the cooperative members. In this case, the exchange of shares may not be considered as sale of goods and do not require fiscal registration. However, for each country should be decided taking into account the peculiarities of the national legislation. For example, it is already defined group of countries, which allowed operations with the cryptocurrencies (in particular, the United Kingdom, Estonia, Switzerland, Singapore, etc.). In any case, for a particular scheme, favorable to the issuer, it needs to be consulted with local tax and legal advisors in the country.

What is the current most risky assumption?

There are reasonable fears that entrepreneurs en masse immediately independently will not be able to master all the features of tokenomics and its accounting and analytical tools. It needs to prepare accompanying *international* educational program, and for its making the part of the funds, expected from the ICO project DARFChain, will be allocated.

How to deal with unscrupulous issuers of tokens or force majeure circumstances?

Even though we assume the use of the system in trusting communities, it is necessary to provide rules for regulating situations of bad faith or force majeure situations. For example, a new computer expert came to the town, released his tokens, but the quality of his work turned out to be such that soon no one wanted to use the services. Or hi become ill and can't server several orders. That is, initially the liquidity of the private token is uncertain, quality guarantees are needed.

The problem of the vague liquidity of private tokens will be solved as follows: for this, each issuer can register tokens in the DAO (distributed automated organization) of the local and / or professional community and deduct there an "insurance premium" - a certain number of tokens. The DAO determines what form of insurance contribution is needed - the issuer's own tokens, tokens or guarantees of other DAO participants or some highly liquid tokens (bitcoins, for example). Then DAO will be a guarantor for his tokens in the event of failure of a specialist or force majeure. That is, consumers affected by an unscrupulous issuer present tokens for reimbursement to the DAO. Since, in fact, tokens are obligations to provide any services, DAO chooses the closest semantic smart contract from the available tokens and the consumer receives the desired service from another specialist. This scheme is beneficial to specialists, since they do not pay anything ahead, unlike insurance schemes.

Why the price of DARF tokens will rise ?

Tokens issued in a limited number, and the number of users of the system will grow, and the number of transactions carried out by them, will grow, that is, payments will increase the turnover of transactions, hence the need for DARF will grow.

What is the further development of the project? What if users bypass the system and do not pay a commission? Or does make fork their own token with similar functionality?

We are in favor of free distribution of the code and for free competition in business. Therefore, we will only welcome the appearance of clones and forks of our project. In order to protect the interests of investors and improve the economy of the service, after reaching the test network of the number of reference servers (miners) in several tens of nodes, we will launch our own pre-mining - the blockchain, which will be the main public blockchain system where user transactions are recorded. We consider the use of developed blockchain-ecosystems with smart contracts, while also analyzing the new developments in this field.

To increase confidence in the new lockup, guaranteeing the unchangeability of data, the system must write the hash of each new block as transactions into large well-known blockchain (Bitcoin, Ethereum, Waves).

Such a solution will make it possible not to depend on the workload of the blockchan and on changes in the cost of the record, and significantly improve the service economy by preserving the entire cost of the tokens.

Installation of the blockchain node will occur during the installation of the system or separately, according to the voluntary choice of the owner of the equipment. For the conduct of transactions and the implementation of smart contracts, the miners will receive remuneration, analogously as in existing blockchains.

The consensual confirmation of transactions will be carried out according to the PoS or Delegated PoS model.

All issued tokens will be exchanged for one-to-one lock tokens.

System Description

Applications

1. The collective contributions accounting for emission in communities (cooperatives, local community: towns, villages, and the online communities of interest: clans from "WoW" to "WoT").

2. Non-profit projects, commercial, venture startups, startups crowdfundings - anywhere you need to organize a transparent accounting of money contributions and expenses. Investors will also get the access to the accounting system and to the analysis of economic activity, which provides visibility and control of investments.

3. The management and accounting in distributed projects on the principles of full transparency and provability for participants and investors.

4. Local and scalable anti-corruption programs.

Technological solution: the distribution of financial and accounting Platform

With Distributed ledger technology (blockchain) accounting system of local debt (digital notes, tokens) is adjusted very quickly (one week) . It necessarily requires the involvement of a significant number of economic entities, and their consensus decision to accept these obligations as payment for their goods and services, such as a contract or a cooperative joint venture.
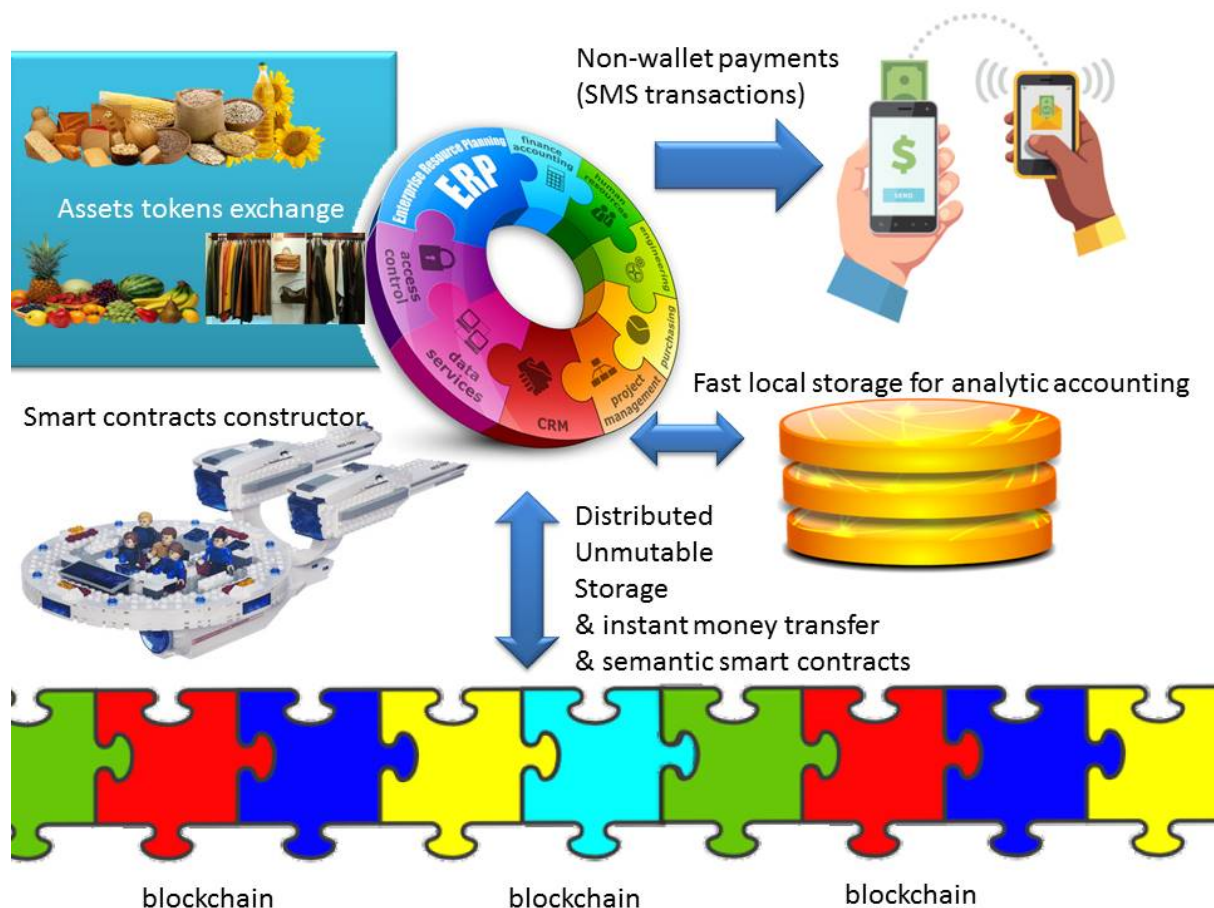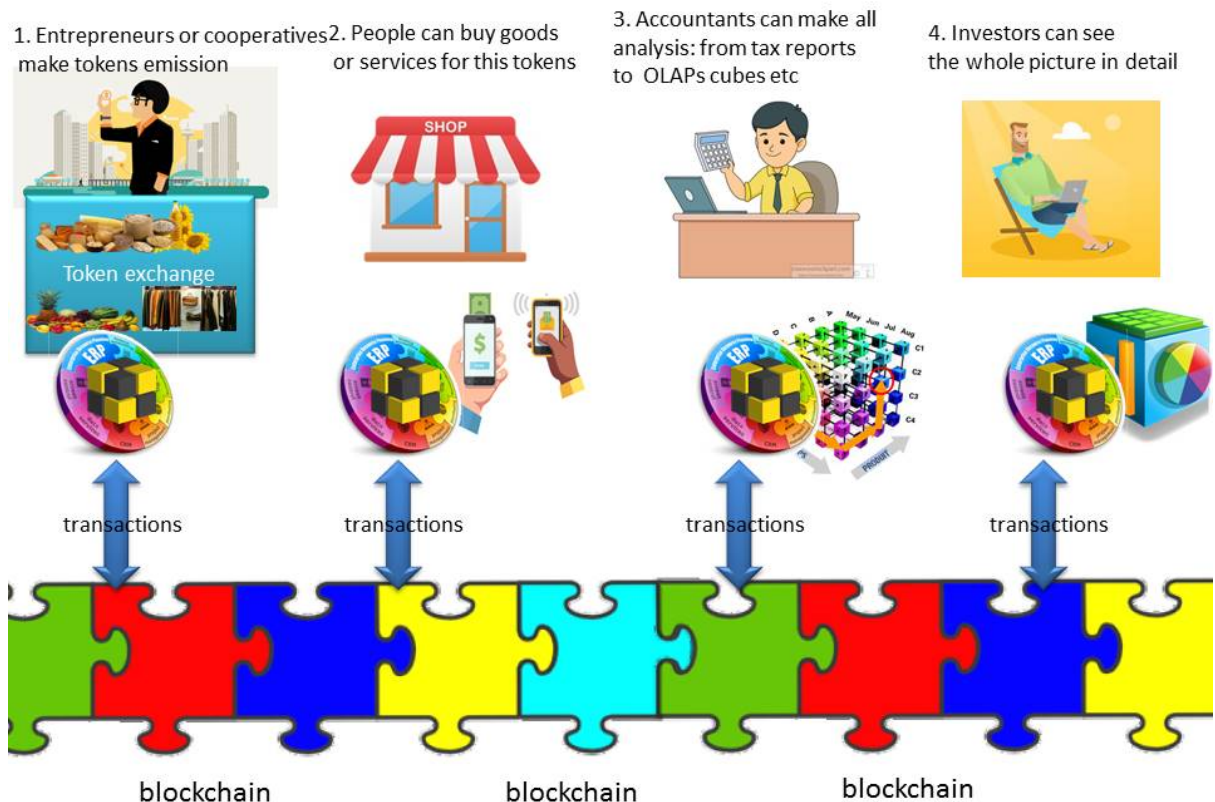
Distributed storage of registry operations in blockchain allows each stakeholder (Project participant) to have stored the actual copy of the registry, which increases the trust between the parties of the system - partners, investors of the project. The data is encrypted before writing into the registry, so that the content of a transaction can only see its initiator and recipient.

This will allow businesses to quickly launch social and commercial projects in the above-mentioned communities (or similar, in a virtual environment), by issuing, in fact, its own "currency" - shares, debentures, etc. But for the full business doing they also need a system of accounting and managerial analytical accounting, which is now missing in the solutions of digital currencies purses .

As smart phones supporting purses activity are still expensive for economically underdeveloped regions, to involve the majority of the population in such an economy it will require to find a solution for the "simple" mobile phones. For this purpose making of "community of money" transfers must take place in the SMS message (see. below).

Tokenomics workflow with DARFChain

1. Entrepreneurs or cooperatives make tokens emission

2. People can buy goods or services for this tokens

3. Accountants can make all analysis: from tax reports to OLAPs cubes etc

4. Investors can see the whole picture in detail

Token exchange

transactions   transactions   transactions   transactions

blockchain   blockchain   blockchain

In addition, the mechanism of semantic design and implementation of smart contracts for ordinary users without programming skills becomes reality . While in blockchain there is a testing of smart contracts with a 1-2-3 names of goods sold, the problem is not obvious. However, in a real business, where invoices contains hundreds or even thousands of items (and this range is only for a small shop) inevitably uncontrolled differences arise - in the spelling of the name of the same goods, their characteristics, such as consumer (color) and technical. It leads to the incorrect accounting of goods in warehouses and retail outlets. In the existing business model, this problem is solved by the involvement of mid-level logistics managers - warehousemens, merchants. However, for the full automation of the smart contract need other solutions, otherwise we will have each position in the smart contract manually check a person.

Semantic smart contracts
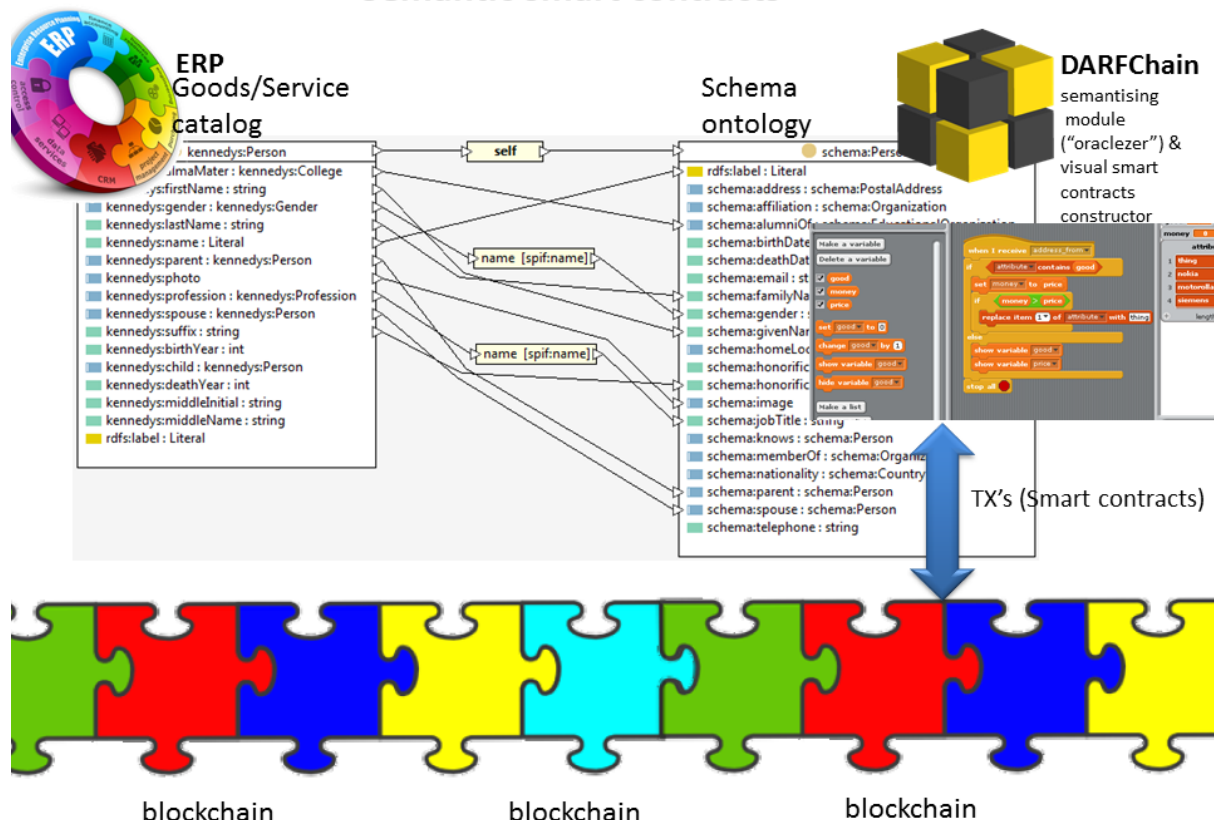
To do this, you need to create an additional mechanism of smart contract semantization for accounting systems have the opportunity to extract the necessary information not only from the product titles and descriptions in human language, but also from the additional semantic fields. It can be implemented on the RDF basis- resource definition framework - the project that grew out of the Semantic Web and OWL - ontology web language. The most elaborated is an RDF qualifier schema.org, developed and maintained by Google, Microsoft, Yahoo and Yandex. Now classifier has 589 types , 860 properties and 114 numbered values. The implementation of the semantic smart contracts constructor on the basis of accounting objects in RDF schema.org format will make another step towards *"lawyerless"* business.

The figure above shows the scheme of interaction between ERP and the DARFCHAIN module of semantization and the construction of smart contracts. Data fields from the catalog of goods and / or services of the ERP system are linked to the nodes of the Schema.org ontology. When creating a smart contract in a visual designer, DARFChain prepares a smart contract that specifies not only the description of the product / service in the human language, but also to which ontology nodes this item is assigned. After that, a transaction containing a smart contract is written to the block \chain. When reading a smart contract, the "oracle" DARFCHAIN compares the recorded data with the schema.org ontology and sends it to the ERP with which ontology nodes the properties of the product / service coincide in the smart contract.

The scheme below is an example of interaction through semantic smart contracts of bots "cafes", "bakeries", "mills" and "farms". The algorithm is given in the section "Under the hood"

1. The cafe wants to buy cookies and pay with their tokens. Cafe-bot begins to place warrants for the sale of cafe-tokens and search for orders for the sale of cookies.

2. The baker sells cookies and wants to pay the flour with his tokens "bakery". The bakery-bot starts placing orders for the sale of bakery tokens and looking for war-sale orders.
3. The mill, accordingly, also wants to sell flour, but to buy grain for its mill-tokens. The miller-bot places the mill-tokens and seeks to buy tokens for grain.
4. The farm sells the grain, and the farmer is looking for somewhere to go to the cafe in the evening and program his bot accordingly)))
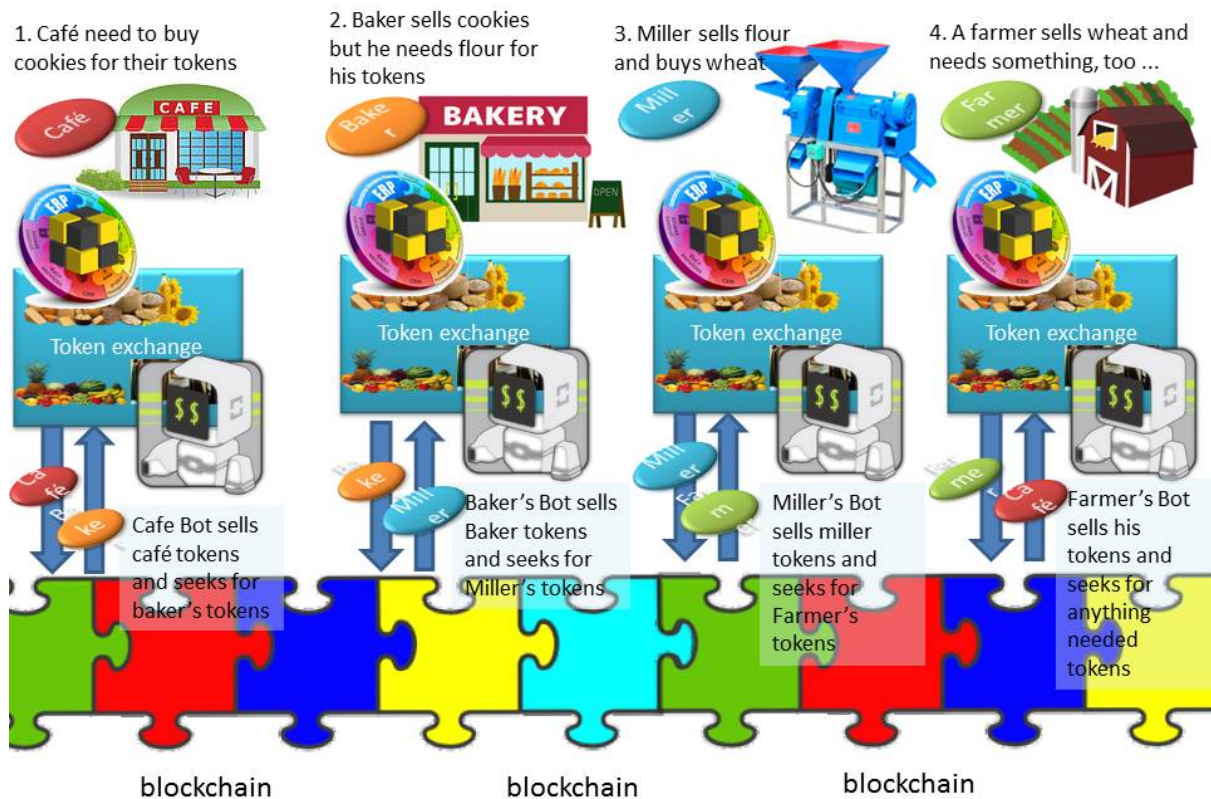
The platform is based on the existing solutions with open source under the GNU / GPL / APL, etc. open source Odoo type and similar systems.

What's under the hood?

In an open source system, such Odoo[4] 'and in the desktop and mobile version, a new module is added, which implements the interface to the blockchain. For each account (contractors, accountability, employees, etc.) the address is set in a public or private blockchain (or different blockchains). For the consolidation of accounting, a separate common address of project is created, transactions on which contain proprietary information of the accounting system (References of counterparties, employees, products / services), in the form of SQL queries.

When starting or during operation, the system reads the new transactions that are sent to a overall address of the project, updates manuals and conducting transactions from addresses of registered accounts in the local database.

When creating a cash wiring (e.g., in accountability transmission), a transaction in blockchain (cross blockchain transaction) is created, user data is copied to the wiring overall project address in an open or encrypted form.

When creating or editing a directory element - a transaction to an overall address of the project in an open or encrypted form is created.

Thus, all the wires are stored in a public or private blockchain, analytic part of the work (reporting) occurs with a local database, which removes all delays of blockchain update.

Semantic smart contracts

The mechanism of design and implementation of a smart contracts is implemented as RDF W3C (resource definition framework) constructor in accordance with schema.org, by adding the UI, allowing to describe accounted objects and persons in accordance with schema.org standard to uniquely interpret their properties and relationships which will implement the "machine-readable" contracts.

That is, technically, to implement a system of semantic smart contracts it needs to make a comparison between the nomenclature and the node RDF in the classifier of goods (services and other entities) and their properties in the ERP system. When you create a smart contract - to record the values of these properties already in the schema.org format. Then, when reading, the addressee of a smart contract can see not only the name of the product, but also a standardized description of its properties, which will allow to automatically classify the goods (services) and to determine already on the semantic level, the correct implementation of smart contract.

AI Bots

The ERP module includes an intellectual trading robot that:

0. Is able to place tokens-semantic smart contracts in various blockchains.

1. Keeps track of a few blockchains and looks at smart contracts-tokens-Assets with a given semantics.

2. When "seeing" the required token, offers to exchange another robot for its own at a given price. If the interest is mutual, then OK.

3. If that bot does not agree, but ours bot has a request to buy our tokens from other bots that do not suit that, then they are offered tokens of the second bot, either they agree or pass on to their customers.

4. If such a clearing chain is closed somewhere, then OK, we write conditions in the smart contract.

5. If not, the unsuccessful buyer is added to the "queue" for the exchange.

 Also implemented a bot that monitors such broken chains and places requests for the purchase of the missing resource on its own behalf, which makes it possible for the gas itself and food to the creators.

Non-smartphone version

In the mobile version for the transfer of money by SMS it needs to be transmitted the hash of corresponding transaction in blockchain. It is advisable to include in the transmitted hash receiver's phone number in order to avoid abuses. The seller of the mobile application sends via SMS customer invoice with the amount of the payment transaction and hash. If the buyer sends in response the approval of the transaction, the transaction is carried out in blockchain.

Implemented system functions

- Freemium - Free downloading and installation of accounting software, with the transaction record in the chain;
- Carrying on micropayment transactions to speed up the passage of the accounting transactions and payments;
- The choice of storage and the ability to blockchain tokens operations in different blockchain;
- Immediate transfer of funds (tokens) between the accounting subjects, with direct reflection in the account;
- Distributed multi-user accounting without the need for server infrastructure;
- The opportunity to participate in the system without the users of smartphones (payment by SMS);
- Trusted transparent accounting for the partners (investors, creditors, customers);
- Unalterable audit trail in blockchain;
- Pass-through account in tokens (each object / subject can have a token (currency) account;
- Controlling the cost of a variety of digital assets;
- Planning and control of cash-flow and budget in the context of tokens;
- Planning token purchases for the calculations;
- Robot of token purchases for the calculations;
- Smart contracts Designer of accounting entity with a common taxonomy based on the schema.org;
- Robot with AI to perform smart contracts with unclear conditions;
- ... and all of the standard ERP-systems buns.

Monetization

System is supplied as freemium, free of charge under the GNU / GPL. Among the first 1000 participants will spread 100 DARF tokens for everyone as a bonus for early testing.

Each transaction overhead for general address unit assumes transference of the single sum of tokens, which is reserved in the system of 5-10% in the emission of tokens.

To speed up the carrying out of transactions in system's blockchain, a fee is charged. In the system, a user can specify a surcharge / discount to the average value of transactions in this blockchain, thereby increasing or decreasing the speed of conducting. The system charges a commission for the purchase of a "gas" (the cost of recording a transaction in a blockchain system) + 15-20% of the market price of gas (conducting a transaction) in concrete blockchain. Payment is made token system [DARF], which are spread by Initial Coin Offering. For the conduct of transactions and the implementation of smart contracts, the miners will receive remuneration, analogously as in existing blockchains.

If you count the number of small businesses (up to 120 million people in the world), cooperative members (about 250 million people in the world), a community, including the online game (up to 50 million people in the world), the amount of ERP transaction record market in blockchain, with 10% of those involving people with a minimum rate of 10 transactions per day will give more than 150 billion transactions a year. With the cost of a single transaction, for example, in the Waves blockchain to 0,001 waves (~ $ 0,0062 at the rate of 5,12 USD / Waves at June 2017), a total amount of about $ 1 billion a year, and when recording in blockchain Bitcoin - up to 300 billion . per year. (average price of transaction 75,000 Satoshi 2500 at the rate of USD / BTC in June 2017). Our commission system is 20% of the value of transactions.

Tokens issued a limited number, and the number of users of the system will grow, it will grow and the number of transactions carried out by them, that is, payments will increase the turnover of transactions, hence the need for DARF tokens will grow, and thus will increase course.

There is possibility of additional monetization on cross-rates when transferring between blockchains.

Team

Founders

Bakulev Constantine

https://www.facebook.com/kbakulev?fref=ts

Ph.D., director of the Institute for Socio-economic modernization, economist, political scientist, philosopher, author of the idea of an international network of municipal economies(http:// socialmodernization.ru/archives/1484),assistant to the deputy of several convocations of the State Duma, the assistant to the vice-president and adviser to the chairman of Russian State Fisheries Committee, headed analytical frameworks in non-profit organizations of the leading economists of the country (S.Yu.Glazyev, M.G.Delyagin).

Taktaev Stanislav

https://www.facebook.com/sa.taktaev?fref=ts,

www.taktaev.ru

Entrepreneur since 1997

Laureate of the premium for the development of the Internet in the region "Sterkh",

Consultant of the European Bank for Reconstruction and Development,

A federal network of SMS "Love has been launched, 2 million users of 2009-2011 with a network of Kiwi terminals,

Co-founder of the E-democracy Development Fund,

A 3D printer with a milling cutter and laser for 2012-2014 was developed. Www.proto-s.ru

First cryptoproekt - Exchange of mutual guarantees, 2014 https://goo.gl/9zOzD8

Advisers

Vrublevsky Pavel, ChronoPay.com

Сергей Гевлич expert in visualization and scribing
https://www.facebook.com/sgevlich

Stanislav Shakirov, https://github.com/choojoy
Laureate of the contest "Open Data"
Founder and technical director of the project RusComFreedom and the Center for Digital Rights Protection
Project manager of several crypto-currency projects
The first project - the Crypto-Currency Exchange, 2014- 2015
Https://github.com/choojoy.

Alexander Ivanov (Waves) (negotiations)
Dmitry Buterin, Vlad Martynov (Ethereum Foundation) (negotiations)
Sergey Sergienko (Chronobank) (negotiations)

Developers

Rybakov Kirill frontend, Solidity https://github.com/FinderOT
LPGenerator.com,

Sergey Stepanets, ODOO expert, 5 years experience

Design PR

Logo design by Alexandra Shakirova https://www.facebook.com/leksandrik

Development and roadmap, Finance

Estimates the development cost and infrastructure

Proof of concept (Module to CU for one accounting system - Odoo): 10-15 BTC ($

MVP (modules 5-6 to popular accounting systems under the GNU / GPL or similar, techniques, userdocs): 65 BTC ($ 165,000);

Alpha (develop a complete functionality for a single user system): 222 The BTC ($ 555,000);

Release (fully adapted Odoo with mobile versions for Android, IOS, WinMob, and training documentation in 10 languages) The BTC 1000 ($ 2,500,000).

Expert assessments labor

Et.	No Scope of work, (programmer-	Expert school	Expert CT	Secondary
1	Fremium - free download and installation of the module to the accounting software (Odoo), c reading and transaction recording in chains	4	4	4
2	Function micropayment on transactions to expedite the passage of records transactions and payments;	2	2	2
3	Feature blockchain storage cross-operations and the possibility of tokens in different blockchain;	April	2	April
3	Funkktsiya Immediate transfer means (tokens) between the accounting subjects, with direct reflection in the account;	2	2	2
5	functions division of roles with distributed multi-user account,	March	4	3.5
6	Function payment invoices through SMS	2	2	2
7	Function Through registration with the tokens (each object / person can have his token (currency) accounting;	4	4	4
8	control value of various digital assets;	February	2	February
9	Planning and control cash-flow and budgeting sectional tokens;	6	April	10

		February	6	April
M ay	Planning token purchases for calculations; procurement robot tokens for calculations;	February	6	April
11	constructor smart contracts from accounting entities with single taxonomy based on schema.org;	8	June	12
Jul y	robot for executing AI with Nia smart contracts with fuzzy condition	6	September	12
	TOTAL	39	56	47,5
	Cost of programmer-month approx. 4 BTC	156	224	190

Budget Shares distribution

Expenditures	Share	DARF
PRE-ICO allocation structure (et. 1,2 of scope) minimum variant	**10.00%**	**8400000**
Original team	10.00%	84000
R&D (including team expanding, advisers, etc.)	30.00%	2520000
Indirect (legal, office etc)	10.00%	840000
Marketing (promotion, market growth, community & expansion)	30.00%	2520000
Technology infrastructure	10.00%	840000
Pre-PRE-ICO investors	10.00%	840000
ICO allocation structure (minimum variant)	**90%**	**75600000**
Original team	10.00%	7560000
Advisers	10.00%	7560000
R&D (including team expanding, advisers, etc.)	25.00%	18900000

investors	10.00%	7560000
Marketing (promotion, market growth, community & expansion)	35.00%	26460000

Finance and resource allocation

Ratiofounding

Aftercore team basis crowdfunding firs receive 20% of the distribution DARF provided 12-month moratorium on the sale of 50% of this amount (10% of total package), these tokens serve as long-term stimulus for founding command. The remaining 50% (10% by volume) may be implemented founders at its discretion, including to cash-out.

Financing of

80% will be distributed according to the table above and spent on direct costs in accordance with the "road map". The costs will be reflected, article by article, in the open for the investors of the project mode, developed DARFChain system. Main financing costs will be spent on the development team, with equal access to the marketing of R & D.

Remuneration

The bulk of the funding needed to fully fund the development team and to attract new team members when necessary. In addition, the expected outsourcing and other services.

It is expected that the commands listed in the "team" will be the main, but the project expects more recruitment in the project development process.

Since we expect to market as quickly as possible (as is likely, the first of such projects), part of the funding will come from profits online, some of which will be deposited with, among others, the distribution of the original team (up to 10%).

Embodiments of the road map

In the scenario "minimal funding" the end result is a distributed operating financial and accounting services DARFchain. It is a decentralized accounting ERP-system, including the financial, credit, insurance functions, as well as tools for developers to implement their applications in DARF infrastructure. In particular, the minimal funding will introduce the basic version of the ecosystem DARF-connectors to blockchainu for one accounting system, which is sufficient for the implementation of programs using a decentralized approach and can work with different kinds of

distributed entrepreneurial team, for example, from blockchain industry or clans the gaming industry as well as from traditional business.

In the scenario "sufficient funding" we commit ourselves to supply the software that we have described, much faster by expanding the development team. We review and use the most effective to date solutions ERP open source. Currently, we focus on the use of Odoo system (in parallel with the study GNUCash, Tryton, SQLLedger and studying all possible solutions to proprietary solutions such as MS Dynamics, 1C). As a result, we are expanding DARFchain solution to corporate accounting standards, with the adoption of GAAP standards, IFRS, so we can take advantage of blockchain and traditional accounting approaches to keep a record for most types of business opportunities in most countries.

We sell records in multitoken mode, that is, each accounting object can be accounted for in its separate "currency" tokens. Built-in robot can exchange tokens, if necessary, based on data from multiple exchanges. Implemented cash-flow planning in a variety of tokens, it is determined by the need for the right type of a token token costs and purchase them at the optimal rate.

We sell designer smart contracts on the basis of the accounting system that will store data about objects in the contract, with additional semantic information in the form of the RDF ontology-Schema.org. The latter makes it possible to implement smart-contracts with large lists of objects and create AI-robot able to these ontologies to make decisions in cases of unclear contract terms.

Third-party contractors and additional services

under the contractors we mean all third parties with which we are ready to work. The number is high due to security checks. Legal and accounting services are also included in this category.

Management and expansion of the community

we expect to expand DARF community in a multilingual and multicultural environment. This will include community management, communication, marketing and promotion.

The aim is to attract customers (buyers-interrogators) to the network and will include activities for direct sales and creation of self-sufficient decentralized sales network, which can be obtained as direct benefits, and% of sales service system. We expect that some of this money will go to the market to re-buy our tokens and fund our servers, hubs and worlds away.

Under the additional technology, we understand the technologies that are needed DARF and can be integrated into it. Basically, we will rely on the application of open source and distributed applications. Basically it will be spent to finance work on the integration of these technologies with DARF system.

Contingencies

reserve fund calculated as 10% of the total budget (5% for a minimum financing).

Public crowdsale

Initial distribution (tentative placement) DARF-tokens will be carried through on the feed platform Waves (84,000,000 non-reissuable DARF tokens), initial coin offering - on the Waves and Ethereum.

Pre-placement begins August 16, 2017. It will last for 2 weeks (14 days). 10% of the price of tokens 5000 Satoshi (0.0001will be Ƀ)for the token placed.

The following system of bonuses will be applied on PreICO to invest the first:

20% in the first 3 days (4000 satoshi/DARF)

15% from 4 days to 6 days (4250 satoshi/DARF)

10% from 7 days to 10 days (4500 satoshi/DARF)

0% from 10 days to 14 days (5000 satoshi/DARF)

ICO will begin November 1, 2017 and will last 42 days . 70% of tokens for the price of 10,000 Satoshi token will be placed. Next bonus system will be used during crowdsale to invest the first

25%in the first 15 days

20% 16 days 18 days

15% 19 days 21 days

10% 22 days 24 days

5% from 25 days to 27 days

0% from 28 days to 42 days

Crowdsale be unlimited in the first night. If you wait 24 hours after the start crowdsale it will not be exceeded in 5000 the amount of Bitcoins, crowdsale will continue for 29 days or until the amount of collected funds will not reach 5000 Bitcoins. During crowdsale valid limit for the sale of tokens per account - 100 Bitcoins.

Pre-pre ICO Donation to BTC:

BTC:

133pjWuEdFBnWfDu74t8dUzAEKZz4AMNXP

Etherium

0xb6c8f16cc72565e05457950c1De4be946E38Da98

Waves:

3PQ1xrcZAiseoZXrtiyyb1pj7Nx3VystoK4

We offer special discounts for tokens and terms of participation in the project for early angel investors.

Footnotes:

1   http://www.forbes.ru/tehno/internet-i-telekommunikatsii/51164-15-samyh-uspeshnyh-onlain-igr

2   http://ica.coop/en/whats-co-op/co-operative-facts-figures

3   cm.   https://www.forbes.com/sites/jasonnazar/2013/09/09/16-surprising-statistics-about-small-businesses/#6d10e815ec88

4   Www.Odoo.org

 http://www.forbes.ru/mneniya-column/konkurentsiya/310117-lokalnye-dengi-kak-sokhranit-nezavisimost-v-vek-globalizatsii

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[1] May 31, 2017, the World Food Program (WFP) of the United Nations with Etherium platform able to carry out a project to target the delivery of food to thousands of Syrian refugees through the distribution of kriptovalyutnyh vouchers that can be redeemed for products on the market, participating in the program. blockchain on the platform were successfully registered and distributed certificates to 10 000 participants in the program. The project was implemented startup Parity

Technologies, headed by co-founder Ethereum Gavin Wood and Datarella blockchain companies (http://www.coindesk.com/united-nations-sends-aid-to-10000-syrian-refugees-using-ethereum-blockchain /).