3/2019

Synergy: A cryptocurrency providing services for Social Solidarity Initiatives

Draft Document

contact@sociality.gr

sociality.gr/en

Table Of Contents

1. Introduction & Motivation

The aim of this project is to create a complementary currency that could provide services to empower collectives that function in Athens, Greece.

In the recent years a number of collectives have started operating in Athens despite the lack of any financial support or access to capital. This lack of financial means limits the growing capabilities of the collectives. Our aim is to provide services that would be able to partially lift these limits through enhancing cooperation and resource allocation between them. We focus on type of services: microcredit, loyalty, internal transactions (cleansing).

Why collectives?

We chose this specific community, because it is essential in constructing a collective approach in the urban landscape and because it has shared needs and capabilities, we could potentially cover. Moreover it combines the two essential parts for any community based currency, being a social structure as well as an economic entity.

As social structures, they are active within the community, produce social value and can add a social aspect to the currency. As economic entities with financial needs they are motivated to adopt a form of transaction that potentially could cover those needs.

Moreover we want to create a cryptocurrency that would not just be a mean of transaction but an added-value currency that would represent something for the community that uses it and carries an ethical and sentimental value. A a result we do not only focus to the collectives as a community but also to the audience/customers that they interact with and partially share some of the values the collectives embody.

Why in Athens?

The Athens setting, hit by the economic crisis, brings about the sentiment of failure of the dominant economic system which encourages economic actors to seek alternative solutions. More over the collective's community in Athens have grown rapidly despite the lack of financial means. Finally we participate in one of this cooperatives and as a result is

easier for us to penetrate the community and create trust over the implementation of the currency.

Why a cryptocurrency?

We decided that the complementary currency should be a cryptocurrency in order to exploit the new technological tools provided from this technology in payments, loans etc. In addition the decentralized nature of the cryptocurrency fits our community based approach and strengthen the feeling of the collectives that the currency is community based. Finally we perceive this project as an important opportunity to test the cryptocurrency concept and provide conclusions regarding the adoptance of these models in a wider range of economic transactions. It is important to note that almost none of the social currencies in use is a cryptocurrency.

2. State of the Art

Community Currencies

Economic Crisis in general provides a framework for the development of alternative forms of liquidity as a mechanism for stimulating the struggling economy. During the Great Recession in the 1930s such forms of liquidity emerged as complementary currencies in several countries hit by the economic crisis. One of these examples is WIR Bank in Switzerland founded as a cooperative in 1934 aiming at combating the crisis with the help of a "ring exchange system" \cite{Defila199460Ideology}. For this purpose the system provided free-interest loans in WIR currency to encourage transactions based on the Free Money theory. This feature made it popular for the crisis-hit economic actors. The policy was later dropped in 1952.

The global economic crisis which started in 2008 and has been defined as the Great Depression, sparked the discussion for alternative currencies once again. Part of this process had been the digipay4growth, an EU-funded program on researching and developing alternative flows of money to stimulate growth. The focus has swifted on digital means of payments through mobile phones or web-based application. Several report have been produced through the program focused on different countries. \footnote{http://www.digipay4growth.eu/deliverables}

Moreover, several alternative payment systems have emerged in recent years in Europe.

One of them is an alternative currency named Sardex in Sardinia, Italy. Sardex is a digital mean of payments between businesses aiming at facilitating transactions. \cite{Sardex2016SardexProfile} It is not exchangeable to other currencies. It uses a database to store transactions and balances and the Cyclos \footnote{http://www.cyclos.org/} program to make online and mobile payments. It allows the users to go negative in their balances as a way to provide credit. Sardex itself decides the amount of credit for each user based on his history and trustfulness. The Sardex team is developing similar local currencies in other parts of Italy.

A similar Project has been developed in Bristol, named Bristol Pound - a sterling backed currency aimed at empowering the local community supported by the local municipality. \cite{BristolPoundWhatPound} It is available in paper and digital form and can be used to pay local taxes. It is convertible to pounds by the Community itself. There has been an interesting research on it's acceptance by the Brunel University \cite{Ferreira2014ResearchPound}

Another alternative payment system has been developed in the Netherlands named Social Trade Circuit \footnote{https://www.circuitnederland.nl/} by the Social Trade Organization (STRO) which also had developed the Cyclos program mentioned above. The Social Trade Circuit aims at creating an alternative flow of liquidity by giving credit to SMEs.

As for Greece, a prominent social currency developed is is TEM \footnote{https://www.tem-magnisia.gr/}, an alternative currency in the city of Volos, aiming at creating a productive community so people can cope with the effects of the economic crisis. It is based on community gatherings where members get to know each other and a initial credit amount is given to encourage the use of the system. It also uses the Cyclos program.

Finally, another local transaction network developed in Irakleio, Crete in recent years is Kouki. It is focused on local transactions and is commonly used for agricultural products. It has a stable 1-1 relation with euro and it is used digitally. It uses a Drupal based for internal transactions.

Cryptocurrencies

A number of cryptocurrencies has been developed in the recent years aiming to cover

different needs in a wide spectrum of the economy. Nonetheless most cryptocurrencies are providing themselves as a commodity and are used mostly as a speculation market than as a mean of transaction.

An example outside this norm is Faircoin, a cryptocurrency aiming to create a fair alternative still without wide adoption in a coherent community. Faircoin has been developed by FairCoop and is aiming at creating a fairer alternative to the current monetary system. \cite{Konig2016FairCoinV2}. Faircoin is distributed through a airdrop process and uses the concept of Proof-of-cooperation as a consensus mechanism between nodes to validate transactions. It avoids the power consuming process of other cryptocurrencies which makes it environmentally friendly.

Faircoin 1.0 was based on Peercoin and used a variety of a Proof-of-stake mechanism. Faircoin 2.0 is a fork of Bitcoin. Faircoin 2.0 in order to validate transactions uses specially authorized nodes [Cooperatively Validated Nodes] which then validate blocks of transactions but partially singing them.

Its has also developed FairCredit as a funding mechanism for social projects and works on creating Fairpay, a card to be used for Faircoins within the existing POS system. \cite{Duran2016Fairpay.Work.}

Loyalty systems

Loyalty systems are being implemented all over the world and in the last decades they seem to have grown in terms of use, complexity and sophistication. The use of technology was made them accessible to both small and larger corporations which tend to create mechanisms and support the logistics required for such a thorough system. This becomes evident upon noticing the volume of software and platforms and the growing business and academic interest in designing loyalty systems.

As a loyalty system (or simply reward program) we can characterize structured marketing efforts aiming on reinforcing a pre-set customer behavior to the whole, potential or existing, customers or to a predefined customer segment.This definition allows us to extend our understanding of loyalty systems and to formulate the vital role data collection holds in the loyalty schemes nowadays.

In order to achieve the needed results, marketing departments need to answer the following questions:

- Who and why will adopt the desired behaviors according to the company's strategic plans.
- Which ways and means could prove more successful in doing so.

Airlines have always been regarded as a great case study demonstrating the core value of loyalty systems, using both traditional (for instance frequent flyer cards) and more technologically advanced ones techniques, like online travel-mile wallet. In multiple ways and through repetition amongst peers (in our example, airlines) loyalty programs have been converted into an industry standard, exhibiting the main attributes of a mean of exchange:

a) rewards can be acquired in ease, in multiple ways and terms, since every company in the industry offers differentiated loyalty programs.

b) the reward cannot be redeemed directly to monetary funds. A monetization of the reward between the customer and the company is not an option on their relationship, since it is not the desired behavior.

The reward in some extent can be redeemed through exchange with other goods- even money. The customer, in many cases, can sell their's loyalty rewards to an outsider.

In this point, a depreciation of the reward may occur given that the company's interest is to put more or equal value to the reward, the customer's interest is to exchange it to the general equivalent of value (money is the universal reference of value, as that things are priced on money and not on miles), and the buyer's interest is through the meditation of money to receive the reward (the commodity) on a lower price.

The following examples are made in order to conclude, as it has been mentioned on the European Bank's "Virtual Currency Schemes. October 2012" report that loyalty programs (like airplane miles) can be considered as a type of virtual currency, both centralized and with unidirectional cash flow, as long as reward points can be exchanged into a good or service but not directly into cash.

In Greece, over the last years of the economic crisis, a lot of sectors and businesses have adopted and maintained loyalty programs. A strong example is the use of such programs by the tormented bank sectors. Banks understanding their inability to drain loyalty from adjustments on exchange rates, loan & mortgage conditions etc, shifted in loyalty programs to temp customers. Using their vast network of affiliates, they from various partnerships mainly with super-market, clothing and gas station chains offering rewards based on the use of their credit and debits cards. Piraeus Bank's Yellows Loyalty Program is a very important paradigm, given that the Bank's marketing efforts seemed to almost exclusively.

Given the above mentioned context, we have to ask ourselves: how can loyalty programs and social solidarity structures connected?

We estimate that loyalty systems can indeed provide a framework of collaboration and common development for the SSE in Greece, if considered in terms of a co-working and co-rewarding ecosystem. Loyalty rewards between members of that system can drive not only consumption but also production inside it, providing a framework in which the role of a virtual - fair and democratic - currency can become possible. The urgent task of the Social and Solidarity ecosystem in Greece (and probably elsewhere) is to make itself self-sufficient and able to withstand the physical world and market practices.

Moreover, an exchange culture is evident between structures of the SSE but mainly on terms of organization proximity or on short-timed projects. The existence of a community designed cryptocurrency, operating also as loyalty program, would be focusing on creating a common space between the initiatives for product/commodity exchange as well as a making collaboration a common choice of its members.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2725399
http://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf

3. Beyond the state of the art

A community designed cryptocurrency

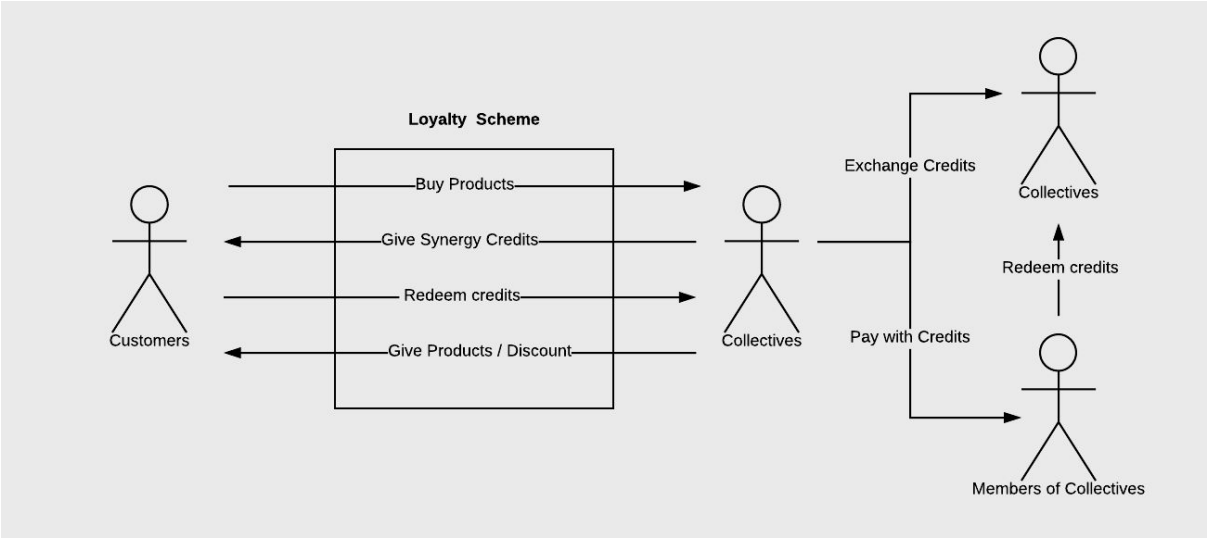
Even though several community currencies have been developed and operated for years none of them has been developed as a cryptocurrency. Moreover most cryptocurrencies do not have a community based approach and do not aim at empowering local communities

by facilitating every day transactions but they rather tend to act internationally and be commony used for financial speculation or asset management. Our aim is to bridge this gap and bring the cryptocurrency technology into the spectrum of community currencies . In addition we aim to experiment with a new process of cryptocurrency development: Instead of having a close community of anonymous programmes taking all the design decisions as it is common in the cryptocurrency field, we aim to design a cryptocurrency based on the needs of the community in a transparent and participatory manner

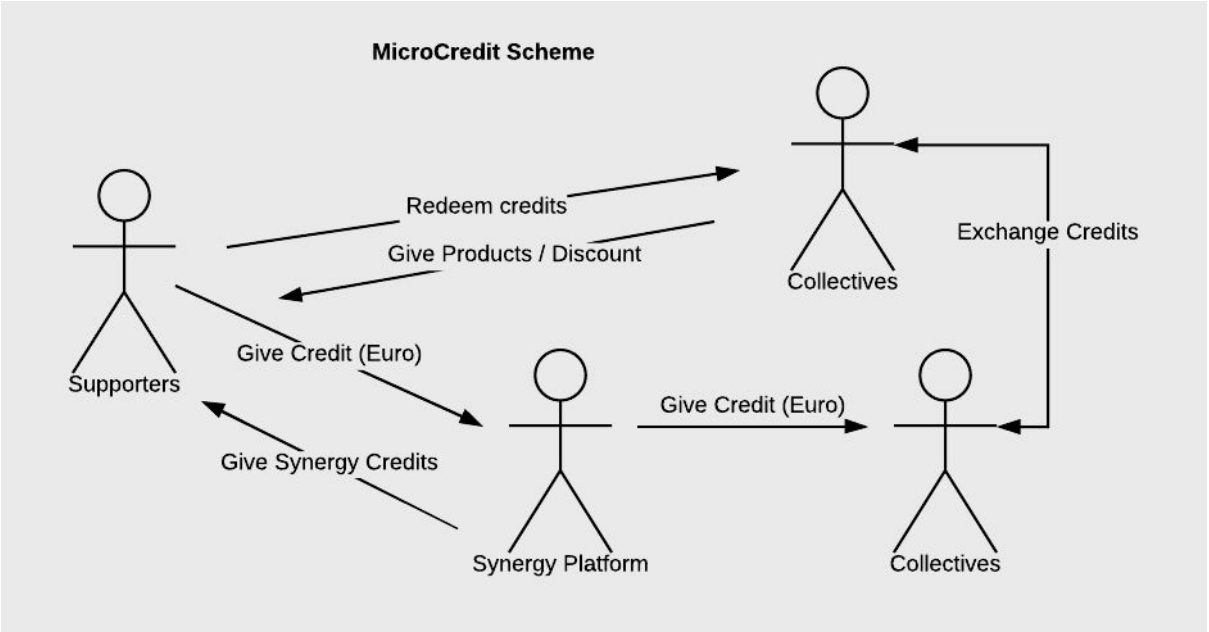
A Veiled Cryptocurrency as a service provider

One more aspect of our research is to work on the concept of the Veiled Cryptocurrency, meaning a mean of transaction that is actually a cryptocurrency but is not presented as such. Instead of promoting a new currency to the community, a subject in which many communities have a change resistance stance and which especially in Greece has been excessively ill-debated in the public sphere, we are going to introduce particular functions and services that the cryptocurrency will serve and promote the services as such and not as functionalities of the currency.

In this concept we have developed three ideas that could be studied and partially implemented. First is the idea of a **loyalty system** based on the cryptocurrency. For example, every time a loyalty member buys something from a cooperative, he receives a percentage of the amount he spends in cryptocurrency that he can than use in any cooperative. The goal is that the discount the cooperative gives to the loyalty members will be translated in more permanent customers. This concept of loyalty allows the implementation of various gamification elements in the system and a field for real-life testing. In addition many cooperatives and consumers are familiar with loyalty schemes and some of them run their own, so we assume that they would be keen to adopt such a system if no significant cost is involved.



The second idea is that of **microcredit.** One of the main problems of cooperatives is the lack of capital, since no public funding is available neither a stakeholder able to provide funds. To answer this need a microcredit scheme could be developed where the consumers purchase cryptocurrency tokens representing products to provide the cooperatives with the capital they need in order to make investments. Instead of purchasing products in advance as physical items or services a consumer could receive cryptocurrencies that he could spend in any cooperative whenever and in any way he wants. We assume that this flexibility will make consumers keener to give credit. Different schemes could be tested and designed for this purpose. In addition a partial implementation could be developed through a donation-like site that exploit the community value of cooperatives to urge the users to participate.



Finally, the cryptocurrency could be used for **transactions among the coop community**. This could amplify some of the exchanges they already do with products and also serve as a way to spend the cryptocurrency they will collect from the loyalty program.

4. Methods

Change Theory

Our aim is to support the community and created a interconnected tool for its members operations. The purpose of the tool is to empower the collectives both structurally and financially. Thus is crucial that we focus at the community itself and the relationship dynamics inside it. We must proceed in such a way that the proposed change is introduced and managed coherently and logically connected to the core operations of the collectives eliminating possible confusion.

In order to formulate our approach we prescribe to the following fundamental principles (Lehman's laws of software evolution):

- Continuing Change: A system in use must be continually adapted or it becomes progressively less satisfactory.

- The law of increasing complexity: As a system in use evolves, its complexity increases unless work is done to maintain or reduce it.

Following the above mentioned arguments we believe that our efforts should not be placed at redesigning the existing interactions inside the system, which would reach to an attempt limited by the social circumstances, but on the methodology of change introduction and management and progressively to system maintenance as it grows on complexity and volume.

In order to effectively design the procedure we deem necessary to access the relationship inside the community in terms of a network. Our on field participation on the Social and Solidarity Economy and the cooperative form of work organization, would be helpful as to construct a throughout mapping of the ecosystem and the relationships between its members. Following that we will need to form the methodology with which we will corroborate through the participants the notion of the shared requirement, the existing or potential problems and the change request. These could be achieved by holding meetups and researching on collectives operations with the intention to form an open to access and debate report about the needed change and describing the technical solution and its feasibility.

Therein after we have to follow-up with evaluating the data of the previous procedure and analyzing the change focusing mainly on its extent. After conclusion, we continue with planning the implementation of the proposed change which would consist of the following parts: propagate, test, document and release change. We plan on running several iterations depending on the new data and conclusion drawn from each cycles and in accordance to the available resources.

As demonstrated about we perceive the following actions and deliverables as necessary in terms of methodology:

- Mapping the community and the relationship of its members, through meetups, focus and research groups, operation analysis and more.
- Conducting the report describing the proposed solution and the implementation plan. Seperate the functionalities of the system into independent and interchangeable modules.

- Providing documentation targeted to the collectives and the parties involved - possibly in the form of digital materials and training.
- Creating a system pilot with participants from the community, measuring the system's effectiveness and weaknesses and redesigning its functions accordingly.

.

In order to be able to follow the desired methodology we have to reach out to partners:

- "Attica Coordination of SSE Structures": It is the association of cooperatives that are located in Attica prefecture founded in 2014. We can use their membership as a base for the first user of the system. We assume that the association would be keen to adopt such a system and provide it to its members. It could also serve as an important node of the system that could in the long term undertake the project of maintaining and expanding the system.

Research Process

Research the community

The first step of this project is to get to know the community itself. Interviews with cooperative members and consumers both quantitative and qualitative would help understand their needs and how/which of the tools mentioned above could server them. Focus groups could also be a method to further research on relations between the communities and how they could cooperate to make this project work. Moreover, working initiatives that have a similar structure could be examined such as Sardex in Italy.

Design the schemes

With the information collected and with assistance from economic, social and blockchain experts, some basic prototype designs could be developed and presented to the community and potential users. This part of the project could run along with the parts mentioned below and all the information collected lead to better irritations of the designs. Governance is also an important aspect of the project. Transparent and stable rules should be established that will help in dealing with any confrontation developed within the community.

Build the group

In order for the schemes to be used by the wider audience a public awareness campaign

must be conducted. For this purpose a website showing all the participating initiatives should be developed. The cooperatives could be presented through a unified branding and a campaign in social media. The goal is to create the community value *(Support your local cooperative*) and raise awareness. Original content could be produced through video and blogging that could help in promoting the cooperatives. Moreover physical advertisement could be used. Most of the cooperatives have physical locations where a special sign cloud be put to indicate that they participate in the network. Poster and leaflets could also be used to better promote the network.

Loyalty

We consider the loyalty scheme easier to implement due to the lower risk it involves. So we think that is should be the first one to be tested live. Clear rules must be developed and probably some legal bindings examined in order to actually implement it. Different gamification elements could be adopted periodically to see whether they influence the use of the system. In the meantime we will research the impact it has in economic terms and also evaluate the user experience of the customers and the cooperatives.

Microcredit

The microcredit part will need much more research in order to be implemented. Specific legal binding must be in place after consulting legal and economic experts. The cooperatives participating must be aware of the problems they might face over this. At first the user will be channeled through a central donation-like site where he can give credit to specific cooperatives. After an extensive period of limited use the system could be made a larger and be used by more cooperatives. A continuous evaluation process will be in place in order to assert the impact to the community.

5. Technology Analysis

For the Technology Part we will collaborate with Synaphea an Athens-based startup which is experienced with the Blockchain technology and applications such as smart contracts and Blockchain as a Service. The Digital Wallet will be developed by Sociality while utilizing existing open-source frameworks.

The Cryptocurrency

We will research on the most appropriate consensus mechanism for our cryptocurrency.

We are going to focus on minimizing energy consumption and maximize transaction speed. We will aim on creating a simple and easy to use and maintain cryptocurrency adequate to the processes and services we are going to implement.

Digital Wallet

A Digital Wallet will be developed as a stand-alone Web Application which could also be used with other Blockchain APIs. The Digital Wallet will incorporate all the functionalities needed for the project such as Loyalty, Credit, Swaps.

Paper Card

A carbon made card will be produced for the members/audience of the systems. With this card they will feel more engaged as members of the community and they will also be able to to give or receive credits easily with a one touch card. Moreover printed QR codes could be used as anonymous reusable wallets.

Campaign Platform

A campaign platform will be developed in open source CMS (Drupal or Wordpress) to ensure publicity for the community and the services provided by it. This platform will have an interactive map with all the members of the community and will also be constantly renewed with offers and reviews to engage the audience.