yetta (ÿ) —

A Blockchain Protocol for Basic Income, Economic Development, and Trade

yetta.io

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Abstract

Blockchain technology and cryptocurrency infuse a new paradigm for philanthropy where contributors could materially increase their financial assets supporting most notable social, civil, and humanitarian non-profits, higher education institutions, and social enterprises.

In a speculative-value contribution model, philanthropists can reduce unemployment, improve education, and increase job creation by sponsoring striving citizens in their own communities through basic income, continuous education and workforce development smart contracts.

Recently the United Nations adopted a set of goals to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda.

The Yetta Protocol is an output recommendation for a three-year research project sponsored by the European Commission, the PIE News project, to assess how Blockchain technology and cryptocurrency could provision unconditional basic income and fund education and training for millions of people within the 28 Member States of the European Union.

The formulation of a real-world pilot schedule within the European Union is underway. Testing of the Yetta Protocol will begin in the first quarter of 2018 in Italy, the Netherlands, and Croatia.

Finally, we offer yetta (ÿ) as a global remittance and payment token for commerce and trade.

As we align and deploy yetta (ÿ) with governmental monetary systems as a local complementary currency for social benefit payments and for local trade, we assert that yetta (ÿ) may be a formidable alternative to Bitcoin for exchange of value financial transactions.

yetta (ÿ) is a Hebrew name meaning “ruler of the household,” where, in this context, ruler is money and household is the global economy.

The currency symbol for yetta is the Latin small letter ‘y’ with dieresis, (ÿ), with an ISO 8859-1 ANSI Character Code of 255. The ISO 8859-1 Character Coding Standard is displayable on all web browsers and mobile devices worldwide. Similar to the US Dollar and the Japanese Yen symbols, the yetta (ÿ) symbol is designed for global digital adoption and acceptance.
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Background

Since the emergence of bitcoin in 2009, Blockchain and cryptocurrency have fundamentally changed the global ecology of money. Bitcoin has disrupted and repurposed our thinking on the role of centralized authorities and intermediaries in governing our financial assets. Ethereum propelled the revolution further with the introduction of Blockchain enabled smart contracts.

Blockchain and smart contracts technology are propelling at a rapid pace. There are over one thousand alt coins representing service offerings over various Blockchain technologies.

First generation Blockchain currencies primarily rely on a “Store of Value” value proposition with minimal participation in gross domestic product. Today, bitcoin has less than 0.01% adoption. We believe the next generation of global cryptocurrencies must create a sustainable demand model, as well as consider user adoption in their value proposition.

We parallel the Blockchain revolution to the Internet, where Smart Contract applications are likened to websites, and Blockchains are likened to web portals, such as eBay or Amazon. Could you imagine every merchant or eBay or Amazon accepting a different currency for payment?

If every website accepted a different currency, it would become challenging stimulating continuous demand in the ecosystem. We believe this is the challenge facing our current Blockchain applications and smart contracts ecosystem.

As each Blockchain and smart contract application create its own token it further fragments the Blockchain ecosystem. The Yetta Protocol creates industry agnostic interoperable de facto standard smart contracts in a decentralized open source platform under one global and unified consortium adopting one common monetary system, yetta (¥).

Our global consortium of architects and developers are collaborating and building interoperable smart contract applications across the public sector, the private sector, and the social and civic sectors using our Core, Common, and Unique software development and messaging framework.

For Blockchain and smart contracts technology to realize its promise, real world adoption must be achieved. With so many tokens representing conflicting and overlapping smart contracts, there exists an opportunity to consolidate and to standardize smart contracts functionality and to develop interoperability standards across them.

The Yetta Protocol is the most advanced smart contract enabled capitalistic Blockchain platform. With a “Turing complete” coding system, we are able to build robust data-driven smart contracts.

The next evolution to the Yetta Protocol is a common ecosystem for smart contracts development transacting under a common digital currency.

The Yetta Protocol provides common functionality for token creation and exchange of value transactions. The Yetta Protocol expands these standards by providing state-management and input and output messaging standards for cross smart contracts interoperability.
A global monetization platform for interoperable smart contracts

The Yetta Protocol adopts a Core, Common, and Unique smart contracts development framework to ensure ubiquity and scalability across current and future Blockchain development.

Yetta Core represents smart contracts that are accessible across all industry or market sectors within our ecosystem, such as token purchases, and transfer of value functionality.

Yetta Common is a consortium of smart contract developers contributing to our ecosystem of public sector, private sector, and social and civic smart contract development.

Yetta Common represents a group of smart contracts specific to an industry or market sector, such as educational and workforce development smart contracts.

Yetta Unique would represent extensions to the yetta Core and Common code set to provide additional functionality needed within a specific organization.

All smart contract applications built on the Yetta Protocol adopts yetta Core and implements the yetta cryptocurrency for ‘store of value’ and ‘exchange of value’ transactions. This approach fuels long-term sustainable demand for yetta as each of our vertical market de facto standard smart contract applications become globally accepted and adopted for commercial use.

A visual representation of our smart contracts development framework is below.
In this remainder of this white paper, we focus on the Yetta Protocol social and civic sector smart contracts by proposing a decentralized Blockchain protocol for social capitalism. Subsequent white papers will introduce leading smart contracts offerings across a wide variety of private sector enterprises.

### 1 Introduction

For the first time in history, it is possible to align two historically divergent ethos of social activism and capitalism. Indeed, the idea of rewarding altruistic behavior with the speculative appreciation of a token designed to foster economic development is an oxymoron that the Blockchain can make both logically consistent and practically feasible.

In particular, social enterprises, civic organizations and educational institutions can leverage the Yetta Protocol to raise donations using philanthropic smart contracts. Additional smart contracts are created for each worker and student. For instance, as students qualify, they are paid monetary stipends based upon their academic performance. The better their grades, the higher percentage of tuition assistance or loan reimbursement they could acquire.
The Yetta Protocol will also support various employment smart contracts. Non-profits would be able to leverage the Yetta Protocol to hire a critically needed skilled labor force. Philanthropist smart contracts could also support internships for qualifying individuals with leading private sector companies. The aim of this service is to provide leading private sector employers with qualified human capital talent, which they may have not identified through their traditional recruitment channels.

There are roughly 10 million non-profits and over 26,000 higher education universities worldwide. This presents a tremendous opportunity for the Yetta Foundation. Alongside the provision of universal basic income, the Yetta Protocol will offer merit and performance-based philanthropic smart contracts to increase education and employment opportunities for prospective students, the unemployed and other deserving citizens around the globe.

We introduce the yetta (𝐲) protocol as a self-sustaining innovation for the simultaneous achievement of both social good and economic development. We assemble the wealth creation incentives of the capitalist and speculative spheres with the human betterment of the social and cooperative spheres to achieve a better quality of life for all.

The Yetta Foundation would earn transaction royalties as the thousands of non-profits, education institutions, and private sector industries leverage our smart contracts for raising funds, measuring performance, and paying educational stipends and employment wages.

2 The dichotomy between capitalism and socialism

In the last 150 years, the world experienced essentially two models for managing the industrial age: the capitalist ethos typical in market economies has been opposed to that of socialist and communist centrally planned ones. The capitalist West advocated a free market model as the dominant one in the global economy against the ideologies of socialist and communist economic models promoted by, for example, Russia and China in the East. This opposition can be thought of as the much older polarization between Yin and Yang in Eastern philosophy.

Each pole strives to apply its own doctrine in order to advance its respective ideology while containing features of the opposing one. We make such philosophical claim as it clearly explains, in our view, why none of these opposing ethos have never been fully implemented and this is paralleled by the symbolic black and white circles present in the Yin-Yang symbol, respectively: capitalism has to preserve some social aspects in order to conduct its business cycles of production while socialism and communism need the institution of the market in order to organize and make their economies grow as China’s GDP growth spectacularly demonstrated in the first decades of the new century. However, from a monetary perspective such a dichotomy, i.e. such an opposition or contrast between two entirely different ideologies is not consistent as both political models share the same monetary framework, i.e. central banking (Lietaer et al., 2012).

It is a simple acknowledgement that representatives of the central banks from capitalist, socialist and communist countries meet regularly at the Bank for International Settlements in Basel, Switzerland, for coordinating policies at the international level irrespective of their ideologies, defended in the lower power tier of the political arena. For the sake of analogy, one can therefore say that central banking is the all-encompassing bigger circle that contains the Dao symbol.

Indeed, independently from the underlying ethos (from capitalistic USA and EU or Russia to communist China), the framework put in place by modern central banking creates an economy framed as a pyramid.
Those at the top, i.e. those nearer to the source of high-powered money creation such as banks, big corporations and political elites, enjoy a strategical advantage to access fiat money in the form of national (dollar, yen, etc.) and regional currencies (euro).

The more one goes down toward the base of the pyramid and the more difficult it is to access fiat currencies. This manifests with the accumulation of extremely big fortunes by the so called 1% while vast segments of the remaining 99% struggle to make ends meet. Apart from legitimate ethical considerations, it is important to highlight the fact that this situation is structural in character and results in the apparently unsolvable dichotomy between making money and helping others, irrespective of the underlying political ideology.

True, the most successful capitalists, if they want to become so and keep their position toward the top of the pyramid have to make their companies grow, too often regardless of social and environmental costs. By contrast, those who are moved by socialistic values face the structural constraints of operating in the framework of central banking. No matter how zealous their efforts are in promoting policies to democratize the access to money, the currency mechanism whereby money is created as debt at positive interest will never allow to properly include the economically unprivileged, and will never generate sustainable skills development or job creation to address global poverty in a satisfactory way.

In sum, it appears that the monetary-economic model typical of the industrial age is does not promote a true meritocracy as the intelligent poor and disadvantaged do not have an equal chance to access and generate income in order to succeed. On the contrary, it habitually promotes the success of those at the top, and suppresses the disadvantaged. At the same time, the present monetary-economic model is framed in a way, in which those at the bottom of the pyramid can be mistakenly perceived by those at the top as ill-equipped or ingenuous, as the efforts of the 99% go to feed the riches of the 1%.

Further, those operating toward the top of the pyramid sometimes damage the environment in the name of economic growth producing negative externalities together with profits. This context has been defined as “corporate crisis”, which emerged “through management mistakes or incompetence (e.g. Barclays, Northern Rock, Royal Bank of Scotland), severe compliance deficits including fraud (e.g. Enron, Siemens), management mistakes and large lay-offs (e.g. Kodak, Opel), or fatal avoidable accidents (e.g. Fukushima, BP’s Deepwater Horizon).” (Nienaber et al., 2014: 387)

No matter how you look at it, if you want to win the monetary game, be it in USA or China in the current post-industrial global economy, it usually comes at the expense of others and/or the environment. If you want to give back to society for all the wealth you have accumulated, you have to lose money by donating it to others. In brief, it seems structurally impossible to optimize making money while helping others irrespective of the underlying ethos.

Notwithstanding such a dichotomy between capitalism and socialism, we strongly believe that scientific research is providing encouraging findings at the level of human nature, a way out of the dichotomy, if implemented with Blockchain technology. Prosocial spending points to the fact that “human beings around the world derive emotional benefits from using their financial resources to help others. [...] Survey data from 136 countries were examined and showed that prosocial spending is associated with greater happiness around the world, in poor and rich countries alike. [Such] findings suggest that the reward experienced from helping others may be deeply ingrained in human nature, emerging in diverse cultural and economic contexts.” (Aknin et. al., 2013)

In a nutshell, making money and doing social good have been traditionally perceived to be mutually exclusive and philanthropy is still conducted in the old way typical of the industrial age. By contrast,
with a post-industrial approach promoted by the digital revolution in in our modern-day ecosystem, the Yetta Foundation proposes a social capitalism Blockchain innovation to overcome such philosophical paradox in political economy.

This philosophical analysis is to be read, however, through high-precision pragmatic lenses, because with the Yetta Protocol, we add an economic reward to prosocial spending, thus increasing the incentive to help others through basic income provision, education and job creation. Hence, the yetta is a token designed as a tool for mutual self-reinforcing economic development of the whole global community. In the next section, we will detail how the dichotomy between such polarizing ethos repeats, as a fractal regression, also in the crypto-industry and we will show that the Yetta Protocol is the innovation to overcome such a state of affairs in this domain.

3 Solving the economic dichotomy between capitalism and socialism

The advent of cryptocurrencies and the Blockchain technology surfaces new social economic paradigms in the monetary domain. The Blockchain mining consensus algorithm defines the underlying ethos of an innovation in the crypto industry – either capitalistic or socialistic. The capitalistic sector has been first to offer disruptive and transformative monetary and financial novelities leveraging this technology, whereas social innovations are existent but lag behind. In the next two subsections 3.1 and 3.2, we will introduce the differences among capitalistic and socialistic consensus algorithms. In subsection 3.3, we will advocate the importance of the Yetta Protocol, a Blockchain innovation intended to rebalance this disequilibrium in the crypto industry in order to apply a new economic model in the wider arena of the global economy.

3.1 Capitalistic consensus algorithms within the Blockchain domain

As Bitcoin clearly demonstrated in the past few years, Blockchain technology is structurally more resilient and transparent than the centralized ledgers typical of the conventional fiat money system based on double entry bookkeeping. In fact, when a transaction is broadcasted, validated and stored in the Blockchain, both ends of the transaction plus a miner have to sign the transaction to make it valid and broadcast it on the ledger. This process is called triple-signed accounting or triple-entry bookkeeping and it represents an important innovation compared to traditional banking accounting practices.

The most prevalent mining consensus algorithms in the capitalistic Blockchain sphere are based on Proof-of-Work and Proof-of-Stake. In what follows, we will briefly describe these two capitalistic models underpinning consensus algorithms in order to exemplify how the dichotomy between capitalism and socialism is also operating at the design level in the cryptocurrency industry.

3.1.1 Proof-of-Work consensus algorithm

In order to create cryptocurrency units and validate transactions on the Proof-of-Work (henceforth, PoW) Blockchain, Bitcoin miners repeatedly execute an algorithm that makes computers work to find a pre-configured string of numbers. When computers CPUs and GPUs perform clock cycles, they spend electricity to mine new coins and this process gives cryptologic strength to the network as it becomes increasingly difficult to reverse and, therefore, re-write transactions history. The two most famous and adopted cryptocurrencies, Bitcoin and Ether, use PoW in order to reach distributed consensus in both currency creation and validation processes.
Bitcoin uses the Hashcash PoW system based on SHA256. By participating to the mining lottery to find the new block roughly every ten minutes, miners get rewarded with the coins contained in the new block. As for April 2017, miners got rewarded around US$ 2 billion, since the inception of the Bitcoin network. Because the difficulty rate to find new blocks increases with the mere passage of time, and the rewarded Bitcoins decrease in proportion, Bitcoin miners agreed to capitalize rewards by gathering in mining pools and exploiting ASIC hardware to increase the possibility to win the mining lottery.

This creates centralization dynamics in the network, resembling the dynamics typical to an oligopolistic economic environment. PoW requires a significant production of electricity to be effective. Therefore, this is the most expensive consensus algorithm in the cryptocurrency capitalistic sphere.

Although there are plans to switch to a Proof-of-Stake consensus algorithm, at the time of writing the same PoW mechanism is implemented in the workings of the cryptocurrency flowing on the Ethereum network, Ether, whereby miners run Ethash as hashing algorithm. Ethereum developers decided to implement an ad hoc mining algorithm to decapitalize cryptocurrency creation and reach distributed consensus through PoW in order to discourage mining centralization. With this goal in mind, Ethash had been codified in order to be ASIC resistant. However, also in this case miners operate within a capitalistic economic incentives structure as a successful miner receives a static block reward equal to 5 Ether. In summary, both Bitcoin and Ethereum translated the capitalistic ethos to frame their consensus algorithms based on PoW.

3.1.2 Proof-of-Stake consensus algorithm

Proof-of-Stake (henceforth, PoS) in the second most widespread type of capitalism-laden algorithm to achieve distributed consensus on a Blockchain in that it rewards minters, or forgers, according to the wealth - the stake of total cryptocurrency supply - that they own. In particular, in PoS-based cryptocurrency systems, the creator of a new block in the chain of transactions is selected in a deterministic fashion as selection depends on how many coins a minter stores on the node. Contrary to PoW mining, PoS minters operate in a monetary system where all the currency supply had been created at the beginning, that is pre-mined (although there are versions of PoS that allow for the production of new cryptocurrency units).

For this reason, in a PoS system, there are not rewards in cryptocurrency, but value is extracted through transaction fees as it happens in the traditional financial services industry. Similar to the zealous enthusiasm during the advent of the Internet, most innovations on the PoW and PoS Blockchains have evolved as a speculative cryptocurrency. As such, many speculate Blockchain innovations may be a bubble. Others argue its implications in the global disruption and transformation as a ‘Store of Value’ and the ‘Exchange of Value’ asset class gives it unique attributes for sustainable growth.

3.2 Socialistic consensus algorithms within in the Blockchain domain

Proof-of-Cooeration (PoC) is the most prevalent mining consensus algorithm in the socialistic Blockchain sphere. PoC, contrary to competing for finding a new block and the reward in cryptocurrency or aiming to own an important stake of the total pre-mined supply, node operators equally cooperate among each other to maintain the security of the network.

In this way, consensus is reached through cooperative behavior and on a more economic and accessible basis in that validators need extremely inexpensive hardware to operate such as a Raspberry Pi.
Moreover, the network works with minimal energy expenses, thus allowing participants to take part from any location provided they can count on a cable connection to ensure bandwidth stability. The PoC arrangement is more efficient, environmental friendly and socially equitable than hard capitalistic approaches to distributed consensus for transaction validation of cryptocurrencies. Therefore, both code and social economic vision are aligned.

3.2.1 Proof-of-cooperation consensus algorithm

In order to exemplify how socialistic consensus algorithms work, we briefly discuss here the instance of a cryptocurrency project which operates via PoC, namely Faircoin. It was initially launched in 2014 and reintroduced in 2017 as Faircoin2 as the first 100% cooperative Blockchain. As it happens in PoS systems, also in the case of Faircoin2, the cryptocurrency supply has been pre-mined with a total 53,193,831 cryptocurrency units migrated in the new Blockchain. In this way, the value of this cryptocurrency is meant to grow against the value of other tokens traded on exchanges as organizers foresee increasing adoption.

As a node is certified by Faircoin2 developers, by identifying the node operator through personal contact and verification, each Certified Validation Node (CVN) simply verifies the new block by following a chronological order without making machines work just to find the new block. In concrete, the machines that are in charge of finding and validating the transactions do it in a rotating form by signing them with the Schnorr signature protocol (Schnorr 1991) and receive a small reward for their cooperation and for the minimum amount of energy that they use. In other words, CVNs operate as it happens for minters in PoS environment earning a fee (0.2 euros) to support the operations of the network.

However, they are rewarded not as a result of competitive behavior, but as a recognition by all the community that they serve. That said, Faircoin purports a socialist ethos that has only been adopted by a few thousand users, since its inception. Although it is early to judge how things will go with Faircoin2, the lack of mainstream acceptance of Faircoin in a world where capitalism is still the dominant economic model already demonstrates, even in the crypto world, the endurance of the dichotomy between capitalistic tokens, such as Bitcoin and Ether, and socialistic tokens like Faircoin.

3.3 The Yetta Protocol: the social capitalism innovation to solve the dichotomy

As established above, opposition between capitalism and socialism changed its arena, from fiat to cryptocurrency, but the dichotomy remains the same in nature. So, we’ve learned, regardless of centralized or decentralized money systems, the natural forces of capitalism and socialism remain divergent. Yet, in a notable quest to change historically incongruent paradigms for social and economic advancement, the Yetta Protocol introduces a new social economic dynamic where both ethos could coexist within the same coherent context.

Smart contracts implemented with Blockchain technology is the most powerful and appropriate governance tool for solving the monetary economic dichotomy between capitalism and socialism through the implementation of philanthropic smart contracts to support economic development and boost trade. The alignment of interests between the socialistic and capitalistic spheres meet at the intersection of wealth creation and human development. The Yetta Protocol is the technological enabler of such a disruptive, and highly innovative, way to approach sustainable economic development.

From a Yin-Yang perspective, the Yetta Protocol places itself in the curve dividing in the middle the two dimensions of the Dao symbol, i.e. to become the point of balance between the Yin and the Yang,
capitalism and socialism. To be in the point of balance on the curved line dividing Yin and Yang it means to go beyond capitalism and socialism by introducing the possibility to frame an economy in which the best features of both economic models are finally maximized by virtue of innovative implementations of the Blockchain technology. In other words, it is possible to tokenize philanthropy and create a variety of services to help advance the agenda of sustainable development goals.

4 The Yetta Protocol: value proposition

4.1 The Yetta Protocol humanitarian case

As we pointed out in the introduction, our basic assumption about human nature is that people are generally good and want to help others as they get a psychological reward in doing so. We further believe monetary incentives are the most sustainable structure to influence behavior as money is software to program social behavior. And finally, we believe that if the wealthy continues to get wealthy and the poor continues to degrade in their social economic status, a society where inequality increases would inevitably become threatened by the forces of crime and inhumane deeds.

Affluent individuals are increasing their efforts to help the economic disadvantaged as, for instance, “between 2001 and 2011, the number of nonprofits increased 25 percent. Their growth rate now exceeds that of both the business and government sectors. It’s a growing business with approximately $316 billion donated in 2012 in the United States alone and more than 9.4 million employed.” (Buffett 2013)

Regardless of one’s social economic status, the majority desire a better life for themselves and their family with an equal and fair opportunity to achieve financial freedom, if the proper work ethic is applied. Yet many times, regardless of intelligence, ambition, and work ethics, the poor and disadvantaged are not able to realize their full potential due to the physical, mental, and financial constraints of their environment - albeit such potential is present:

“the closer we look at the lives and activity of the poor, the more we see how enormously creative and powerful they are and indeed, we will argue, how much they are part of the circuits of social and biopolitical production. […] The poor, the unemployed, and the underemployed in our societies are in fact active in social production even when they do not have a waged position. It has never been true, of course, that the poor and the unemployed do nothing. The strategies of survival themselves often require extraordinary resourcefulness and creativity.” (Hardt and Negri 2004: 129 and 131)

For the small percentage of underprivileged who eventually overcome their circumstances, they must be exemplars on many levels to achieve upward progression or mobility in society. For the abundant accumulation of wealth and intelligence in the world today, there must be better solutions and incentives to minimize the steep divides and to establish a more equal and fair system for the deserving and underprivileged.

Similar to how large corporations with strong financial powers seek to merge, partner, or acquire smaller companies with more agile and innovative capabilities, this model serves as a blue print for a self-sustaining social capitalism ecosystem.

We believe that if the wealthier citizens of society are incentivized by a monetary reward to contribute to the most striving, capable, and promising citizens with lesser means, then truly a global and a more equal human capital meritocracy could be achieved in a win-win scenario. Therefore, the Yetta token for humanitarian contexts bridges contributions from the wealthy philanthropist to contrast poverty by
generating employment and education opportunities: the yetta token channels fiat money and cryptocurrency contributions to fund them in a transparent and automated way by design.

4.2 The Yetta Protocol business case

As we established prior, PoW and PoS Blockchain innovations are driven by a capitalistic ethos – codified and tradable as cryptocurrency assets benefiting from ‘store of value’ speculative financial gains. The more the Blockchain technology resonates with real world application, the longer it sustains purchasing demand and speculative value among its supporters.

Philanthropy is a multi-trillion-dollar industry worldwide (Mintz 2015). Encapsulating the social and economic tax-deductible benefits of philanthropic contributions with Blockchain speculative monetary incentives could ignite one of the most exciting and enthusiastic movements for Blockchain applications in the context of economic development, education and trade. We believe our social capitalism Blockchain innovation and business model have long-term sustainability and could feverishly drive continual demand for yetta.

Unlike other Blockchain protocols allowing their users to create subordinate tokens using their protocol, all our users must transact in the yetta currency in order to avoid stagnation among different currencies at protocol inception and maximize efficiency in view of speculative appreciation. Each organization implementing the yetta smart contracts will be given a unique address within the Yetta Protocol for receiving contributions. This unified payment model stimulates continuous demand and speculative value for purchasers of yetta. This does not preclude the Yetta Protocol to adapt in order to communicate with other currencies in a complementary fashion.

Our goal is to provide basic income, continuous education, and gainful employment capabilities to over one million deserving citizens worldwide over a 10-year period. The Yetta Foundation earns transaction revenue for all monetary transactions executed over the Yetta Protocol. In the next section, we will detail the features of the Yetta Protocol and outline how we intend to successfully achieve what we consider as the most urgent and important among those goals.

5 The Yetta Protocol: smart contracts overview

The Yetta Protocol is the most advanced smart contract enabled capitalistic Blockchain platform. With a “Turing complete” coding system, we are able to build robust data-driven smart contracts to address societal challenges for basic income, continuous education, and workforce development.

The Yetta Protocol smart contracts are self-executing contracts with the terms of the agreement between grantors and grantees being directly written into lines of code. The code and the agreements are contained and exist across the Yetta Protocol distributed, decentralized Blockchain network.

As we will practically show in Annex 1 below, our basic income, educational, and workforce development smart contracts defines the incentives, rules, and disqualification of our philanthropic contributions in the same way that a traditional contract does, and automatically enforces those obligations without compromising the human component.

5.1 Philanthropic contribution smart contracts
We are offering the Blockchain community a novel innovation in social capitalism where philanthropists could potentially earn financial increases from their contributions to notable social and civic causes and to their alma mater higher education institutions.

Our smart contracts operate contrary to traditional donations model where contributions are made payable directly to the non-profit or charitable organization where the majority of the proceeds are allocated to general overhead. In our decentralized philanthropy model, contributions are made available to the social, civic, or higher education institution. However, the contributions can only be withdrawn by an individual basic income, educational, or employment smart contract. Meaning, the funding is allocated at the organizational level but disbursed at an individual level.

For a depiction of our philanthropic ecosystem see the below diagram.

[Diagram showing the relationship between individual beneficiary, philanthropist, NGO beneficiary, yetta protocol, and the Yetta Philanthropic Ecosystem]

5.1.1 Traditional current-value contribution smart contract

As we will detail in the next subsection, the key innovation we are proposing to the Blockchain community is a revolutionary Speculative Value Contribution Model. Nonetheless, for the convenience of some contributors, we offer a Traditional Current Value Contribution Model, where contributors could make one-time or scheduled contributions based on their current assets rather than their speculative assets.

Traditional current-value contributions maintains all of the financial tax-deduction benefits available in the centralized money system. However, there are additional benefits in leveraging the Yetta Protocol philanthropic smart contracts to make traditional current-value contributions:

- Contributions can only be disbursed through organizational or individual smart contracts.
- Contributions could be tied to Impact measurement performance-incentives.
- More effective outcomes could be achieved by aligning contributions with performance metrics.
5.1.2 Speculative value contribution smart contract

In modern day philanthropic gifting, despite the tax-deductible economic incentive, the net effect to financial assets is at a loss. Even with a tax savings of thirty percent (30%), per one million dollars (US $1,000,000) in contributions, it inherits a US $700,000 loss in net financial assets to contributors.

The yetta philanthropic speculative-value smart contracts protocol completely reverses this paradigm. Depending on your tax jurisdiction, all contributions to non-profits on the Yetta Protocol are not only tax-deductible contributions, but each contribution could result in a net positive balance to your net worth or financial assets. In simple terms, with speculative-value contributions, you do not contribute from your current assets resulting in a loss, you contribute from your future speculative value resulting in a profit. This approach solves the dichotomy between capitalism and socialism or communism and between consensus algorithms at the protocol level.

For example, let’s say a contributor purchases US $100,000 in yetta. In turn, they issue a philanthropic smart contract to donate to their alma mater university for top performing students in the College of Computing and Bioinformatics. For a speculative-value contribution, it would ask (a) what percentage of any yetta value increase they would like to contribute to the NGO and (b) what periodic time interval would they like to donate, such as monthly, quarterly, or annually.

The default contribution percentage for speculative value increases is set at fifty percent (50%); and the default contribution time interval is set at monthly. However, the contributor could set their speculative value contribution percentage as low as five percent (5%) to as high as one hundred percent (100%). And they could set their contribution time interval ranging from daily to annually.

Let’s say they set the speculative value contribution percentage to twenty percent (20%) and over the contribution period, the original US $100,000 yetta purchase has a market value on crypto exchanges of US $200,000. This would result in a financial increase of US $100,000. In this case, the philanthropic smart contract would send US $20,000 to the university at their digital address on the Yetta Protocol and US $80,000 would constitute as a positive financial increase to the contributor’s net worth.

If for whatever reason, over the contribution period, the contributor’s yetta smart contract has not increased in value, then no contribution would be disbursed.

The below diagram provides a visual explanation of the speculative value contribution model.
5.2 Yetta Protocol: basic income smart contracts

Basic Income is a form of social security in which all citizens or residents of a country receive a reoccurring sum of money, either from a government or some other institution, independent of any other income.

With the global evolution of human automation and robotics technology, such as driverless cars and machine learning technology, many lower wage jobs in customer service, fast food, and manufacturing are rapidly vanishing leaving workers in precarious employment conditions. Economists argue the world will face a humanitarian crisis if solutions for unconditional basic income are not available within the next twenty years.

The Yetta Protocol provides two classes of basic income smart contracts – unconditional basic income and philanthropic basic income. They could be configured as unconditional or could require continual qualification such as income qualifications, job search, or job training completion.

5.2.1 Yetta Protocol: unconditional basic income smart contracts

The Yetta Protocol unconditional basic income smart contracts would allow either a government or public sector NGO to create a total supply of tokens. The newly created cryptocurrency would be declared equal in value to the local economy fiat currency, such as the Euro. However, the newly created tokens could only be spent and distributed within the local digital economy.

A tailor-made application process would determine how much each individual is entitled to receive in monthly benefits and such awards would be codified in the unconditional basic income start contracts. The smart contracts will distribute complementary cryptocurrency basic income to each individual based upon any governance rules, or lack thereof.
In Annex 1 below, we will make show how the Yetta Protocol can be implemented for unconditional basic income in the context of Commonfare, i.e. welfare of the common.

In this testbed for research and technological development of the Yetta Protocol applied with the social good in mind, within pilot communities in three countries of the European Union: Italy, Croatia and the Netherlands.

The goal is to ascertain the effects of the provision of an unconditional basic income, starting from subjects experiencing poverty, low income and unemployment to then include people from all walks of life. In Annex 1, we will give more details on the how this smart contact is the designed to work, starting from in the Italian context as pilot participants are already active in the design of a model tailor made for this community of precarious freelance artists in Milan.

5.2.2 Yetta Protocol: philanthropic basic income smart contracts

The basic income experiment with fiat currency has been in trials in a few countries, most recently in Finland. However, the funding to provide sufficient basic income in fiat currency for sustaining a middle-class livelihood has been deemed too expensive by most governments.

As such, we propose philanthropist sponsored basic income, paid in the local economy fiat currency, similar to welfare. With universal basic income, all individuals in a community are generally entitled to basic income regardless of their social economic status.

Philanthropic donations are intended to provision basic income to the recipients. Philanthropists indicate which country to contribute. Yet, disbursements are allocated on an individual basis based upon the criteria established by each country or governing agency. As an example this approach, see givedirectly.org.

In other words, we are introducing a globally scalable philanthropy-based basic income smart contract protocol where philanthropists could contribute to a country population’s basic income based upon a percentage of their current-value or speculative-value increase in yetta.

A general illustration of the philanthropic Basic Income Smart Contract is depicted below.
5.3 Yetta Protocol: career income smart contracts

A Career Income smart contract is similar to Basic Income except the grantee must work for their income. Career Income smart contracts are ideal for social enterprises and civil non-profits to expand their contingent and full-time human capital resources.

Anyone suitably skilled talent could fulfil a Career Income smart contract regardless of their education or social economic status. Indeed, in Annex 1 below we will describe the behavior of career income smart contract for freelancers and NGOs in the Netherlands and for the youth unemployed in Croatia.

The private sector could also utilize Career Income Smart Contracts for hiring qualified ‘disadvantaged’ applicants for job training internships. The private sector internship model is intended to provide leading corporations a philanthropic paid incentive to hire from a pool of qualified disadvantaged candidates they would not routinely consider in their established recruitment channels.

NGOs and social enterprises can leverage the Yetta Protocol to create performance-based smart contracts for their employees and independent contractors or contingent workforce. Depending on the relationship with the worker or service provider, performance metrics could be configured to include hours worked, services delivered, and quality of work. Each performance metric could include a compensation structure.
Once a Career Income smart contract is created and approved by the authorized signatories, the worker could complete a time sheet or invoice sheet upon completion of services. For employees, time sheets could be completed on a weekly or bi-weekly basis. The designated signatories from NGOs and social enterprises must review and digitally approve each time sheet or invoice sheet upon submission. Once the time sheet or invoice sheet is approved, the smart contract would automatically convert the payment amount in the NGO’s yetta payment account to fiat currency for electronic payment to the worker for satisfactory completion of their services.

All payment transactions along with their associated performance ratings and approvals are planned to be stored on the Yetta Blockchain. Both employers and workers will review the quality of the performance according to the rules of the Yetta Reputation System previously agreed upon during the application and hiring process and codified in the Blockchain.

An illustration of the Career Income Smart Contract is depicted below.

5.4 Yetta Protocol: scholarship smart contracts for grantees

Millions of smart, talented, and worthy citizens lack the financial resources to attend a university for higher education, or sometimes, even a local vocational job training program.
Leveraging the Yetta Protocol scholastic smart contracts, colleges and universities, job training centers, and scholarship funds can create performance-based or socio-economic based scholastic smart contracts. By tokenizing philanthropy to fund scholarships, each smart contract with a student could include a stipend amount and any academic achievement requirements, such as standardized test scores or in classroom academic GPA performance. The scholastic smart contracts can be configured to pay either the full sum or a performance-based prorated sum of an academic stipend award.

In Annex 1 below, we will describe how this type of smart contract can be applied in education systems prone to corruption and clientelism in the application process such as Croatia and in more transparent environments such as the Netherlands.

In subsequent versions of the scholastic smart contracts, the contributors will be able to browse and select either a university or a student profiles by continent, regions, nations and cities and choose which students to fund in order to allow them to enroll in their university or vocational training program of choice. The Yetta Protocol enables complete transparency in tracking both funds allocation and student performance on the Yetta Blockchain.

An illustration of the Scholarship Smart Contract is depicted below.

**yetta (ỹ) -- A Blockchain Protocol for Philanthropy, Economic Development, and Trade**

5.5 yetta Core money transfer and remittance payments smart contracts

Despite the radical, disruptive, and transformative value of digital cryptocurrencies, digital currencies are predominately promoted as “store of value” currencies with minimal global acceptance and real-
world adoption. We believe the next generation of cryptocurrencies needs to consider both “store of value” and “exchange of value” in their value proposition.

Our goal is to establish yetta (¥) as the global de facto digital cryptocurrency for commerce, trade, bill and invoice payments, and obligatory notes payments around the world. This objective cannot be achieved considering only digital to digital currency connectors. The global economy still primarily conducts trade and commerce in fiat currencies.

We propose a novel approach to achieving immediate worldwide acceptance of the yetta (¥) by introducing a sender-side payment service rather than a receiver-side payment system. In a receiver-side payment system, you can only pay the receiver if the payment address is compatible with your Crypto Wallet, such as Bitcoin to Bitcoin, or Ether to Ether.

yetta (¥) is developing Fiat Currency Adaptors (FCAs) in every major currency reflecting the global payment needs of our community. With FCAs our members could pay invoices, bills, and other obligatory notes in the currency of the destination recipient. We will integrate online bill payment services, as similarly provided by most banks, for our community to stimulate global acceptance and to enable an “exchange of value” service.

With yetta Core, philanthropists will send money to NGOs from a list of acceptable digital or fiat currencies. The origination currency will be converted to yetta and stored in a yetta-compatible wallet managed by the NGO. Based upon the NGO adopted smart contracts, the money would be disbursed to individual beneficiaries according to the terms of the philanthropic smart contracts. Once the individual beneficiaries receive the money, they could keep the money in yetta, or convert to fiat currency for local use. In some cases, the smart contract may be instructed to pay a third-party account on the behalf of the beneficiary, such as their academic or student loan payment account.

This same service could be leveraged to send money to friends and family in any foreign currency without having to liquidate or to convert yetta (¥) to a fiat currency. We are integrating with other fiat money services pay bills and to send money to friends and family easy and convenient.

In summary, the yetta Core money transfer and remittance payment smart contracts will be initially adopted as an exchange of value medium for philanthropy contributions; and inevitably, will evolve into a global bill payment, money transfer, and remittance payment solution worldwide.

5.6 The Freecoin wallet

Although our inclusive approach to technological adoption allows each participant to the Yetta Protocol to use the crypto-wallet that better suits one’s needs, we will offer an open source tailor made digital multi-currency wallet for participants who are not crypto savvy and need a proper tool to start managing their funds and revenues on the yetta monetary ecosystem. The crypto-wallet that participants will be able to use by default is the Freecoin Wallet. This digital multi-currency wallet can interoperates with various different fiat and cryptocurrencies: Bitcoin, Ether and, yetta. In brief, the Freecoin Wallet is the backend component apt to serve the money management needs of participants on the Yetta Protocol.
6 Measuring and managing the Impact of the Yetta Protocol

Impact Investments are “investments made into companies, organizations, and funds with the intention to generate social and environmental impact alongside a financial return. Impact investments can be made in both emerging and developed markets, and target a range of returns from below market to market rate, depending on investors' strategic goals.” (Global Impact Investment Network - http://bit.ly/1J1l32n)

For the Yetta Protocol is intended to become a world class set of tools in economic development and trade, we strongly believe that the social and economic impacts it is designed to achieve have to be accounted for and communicated since the beginning. Therefore, the implementation of the Yetta Protocol will have an independent external evaluator auditing our internal impact measurement and management framework.

Our Impact Thesis can be summarized as follows: by endorsing world class best practices in impact measurement, the Theory of Change will be the initial impact management tool that we will deploy. The Theory of Change, or, the Impact Value Chain, is a causal chain by which activities achieve outputs, outcomes and impact, and use resources (inputs) in doing that and is the starting point in the impact measurement and management:

“Theory of Change is essentially a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context. It is focused in particular on mapping out or “filling in” what has been described as the “missing middle” between what a program or change initiative does (its activities or interventions) and how these lead to desired goals being achieved. It does this by first identifying the desired long-term goals and then works back from these to identify all the conditions (outcomes) that must be in place (and how these related to one another causally) for the goals to occur. These are all mapped out in an Outcomes Framework. The Outcomes Framework then provides the basis for identifying what type of activity or intervention will lead to the outcomes identified as preconditions for achieving the long-term goal. Through this approach the precise link between activities and the achievement of the long-term goals are more fully understood. This leads to better planning, in that activities are linked to a detailed understanding of how change actually happens. It also leads to better evaluation, as it is possible to measure progress towards the achievement of longer-term goals that goes beyond the identification of program outputs.” (Centre for Theory of Change) - http://www.theoryofchange.org/)

![Impact Value chain. SOURCE: SIIT, 2014.](image)

Yetta philanthropists can earn financial increases supporting three types of social economic initiatives: basic income for the poor and deserving citizens around the world, educational scholarships and stipends to qualifying individuals, corporate internships for disadvantaged youth, and career jobs for the unemployed in social and civic organizations.
Regarding to outcomes and impact indicators, the Yetta Foundation will involve the beneficiaries in multiple ways, i.e. through interviews, focus groups, surveys, etc. and will combine quantitative and qualitative data. The Yetta Foundation will gather the data from relevant stakeholders such as social enterprises, green enterprises, NGOs and corporations and Higher Education Institutions through administrative records such as academic records, program systems such as score cards maintained by staff, or through instruments specifically created for the purpose together with the wealth of data stored on the Yetta Blockchain on top of which the Yetta Protocol will function.

Moreover, because the Yetta Foundation will operate in many countries, in many different languages, it will redact country-specific impact measurement systems which will be deployed by local stakeholders and local teams.

Yetta’s impact management and measurement system is thought with the goal to ascertain to what extent the Yetta Protocol will concretely and measurably help to address global challenges in the context of the 17 Sustainable Development Goals (SDGs) agenda of United Nations:

- no poverty, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation and infrastructure, reduced inequalities, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace, justice and strong institutions, partnership for the goals.

Nowadays, impact measurement tools, methods and metrics are in search of convergence towards standardizations and regulation. According to the developments in the impact measurement field, the Yetta Foundation will endorse the most effective available methods and databases to select outcomes and impact indicators.

First, we will adopt the Impact Reporting Investment Standards (IRIS), the catalog of globally-accepted performance metrics. IRIS has been an initiative of the Global Impact Investing Network (GIIN) since 2009. Prior to that, IRIS was jointly managed by The Rockefeller Foundation, Acumen, and B Lab, which began development of IRIS in early 2008 with technical support from Hitachi, Deloitte, and PricewaterhouseCoopers.

Secondly, we will refer to the Global Value Exchange (GVE), a crowd sourced database of Values, Outcomes, Indicators and Stakeholders. It provides a free platform for information to be shared enabling greater consistency and transparency in measuring social & environmental values. Finally, we will endorse the Outcomes matrix by Big Society Capital (BSC): this tool has been designed from a beneficiary perspective and includes nine outcome areas which reflect what a person needs to have a full and happy life. Each outcome area has a set of related measures to assess social impact at the individual level and for community, sector and society (http://bit.ly/2vdNXm8).

Here some definitions of these organizations and a few relevant examples of indicators from their sites to illustrate to the reader Yetta’s approach to impact measurement and management:

**IRIS:**

- Employment indicator: Percentage of the organization's clients who were placed in part-time, full-time, temporary, or permanent jobs during the reporting period.
• Education indicator: Enrollment statistics as of the end of the reporting period, both full-time and part-time, where each discrete student is counted regardless of number of courses.
• Education indicator: Number of students receiving full scholarships during the reporting period.
• Education indicator: Number of students receiving vocational or technical training during the reporting period.

Global Exchange Value:

• Poverty outcome: Poverty (change in) for People living in poverty and/or financial exclusion (Individuals)
• Poverty indicator for basic income: Poverty and security of income is an indicator of Poverty (change in) for People living in poverty and/or financial exclusion (Individuals)
• Employment indicator: People Experiencing Long-Term Unemployment
• Employment indicator: People living in poverty and/or financial exclusion
• Employment indicator: Number of individuals, youth and adults, with relevant skills for employment and entrepreneurship
• Education indicator: Ensure equal access to affordable and quality technical, vocational and tertiary education
• Education indicator: Ensure all learners have knowledge and skills to promote sustainable development
• Education indicator: Expand number of scholarships available for enrolment in higher education
• Employment and Education outcome: this outcome relates to ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all; Reducing unemployment and reducing the human capital shortage in non-profits and NGOs.

BSC’s Outcomes matrix:

Outcomes in Employment, training and education, at the individual level: the person is in suitable employment, education, training or caring work; at community, sector and society level: jobs, education and training opportunities are available for everyone.

The Yetta Foundation will customize the impact management and measurement system to help contributors aggregate the data for reporting. All the information collected will generate knowledge that will help both the contributors and the Yetta Foundation to adjust the course of action, including potentially revising the objective, the list of stakeholders and the indicators used to reach the achievement of the objectives.

The Yetta Foundation will follow the social value principles to provide guidance on understanding and managing material impacts and will use stakeholder involvement to help identify the most important outcomes to the organization and to set out an understanding of those outcomes that has been informed by stakeholders. Impact dissemination will be communicated to the public on the http://yetta.io/ website, where we will also include employment and education outcomes and indicators clocks to show the impact of the Yetta Protocol in real time.
7 Conclusion: the realization of social capitalism

In the modern day capitalistic ecosystem, capitalists are many times rewarded by draining resources from both the workforce and the environment and by promoting an economic model that increases inequality at each cycle. Some may choose to give back parts of their accumulated fortunes as donations to the third sector and education institutions in order to compensate society for the former drainage and help address societal challenges.

With the Yetta Protocol, we introduce a new incentive structure to increase philanthropic contributions. Indeed, with yetta philanthropists enjoy a monetary incentive to help reduce poverty and unemployment and to assist in education and employment opportunities through a social capitalistic framework. By solving the dichotomy between capitalism and socialism or communism with business and technological dexterity, the Yetta Protocol is a Blockchain technology holding features for promoting a win-win-win outcome for all the constituencies involved: philanthropists, the striving citizens in our communities, and social and civic non-profits together with education institutions.

First, the Yetta Protocol philanthropic contribution model can serve also as a mechanism to fund basic income programs without government intervention to increase economic security, improve health, and promote work-life balance among workers and unemployed people building skills while looking for their next quality job.

Secondly, we acknowledge that the vast majority of NGOs are underfunded and could benefit with an infusion of qualified labor to advance their social missions and goals. The unemployed, albeit educated or uneducated, could fulfill many of the labor and skilled roles needed within the NGO community. Having a philanthropist potentially earn financial increases by funding the human capital requirements of NGOs, creates jobs and reduces unemployment and establishes a win-win-win for the NGO, the worker, and the philanthropist. In essence, the Yetta Protocol is the opportunity to create a self-sustaining social capitalism ecosystem where philanthropists empower the most plausible social and civil organizations to hire the unemployed and disadvantaged in order to propel their social missions.

Finally, our social capitalist model can be applied to support deserving students in both higher and vocational education by either funding their scholarships or the education institutions, also in this case with a win-win-win outcome enabled by the Yetta Protocol. It rewards the education institution with funding, the economically disadvantaged prospective students with a scholarship or new graduates with paid internships, and the philanthropist with a digital and highly liquid store of value. This within a framework, which is meritocratic and transparent by design thanks to leveraging the features of the Blockchain technology.

To conclude, we strongly call readers to participate to the revolutionary transition offered by the Blockchain technology with the Yetta Protocol. Bitcoin is the reason why we started on this path. At Yetta, we embrace Bitcoin because it opened a breach in the apparently monolithic landscape of monetary economics by innovating the world of currency and payment systems in a way humanity never experienced before. It created vast fortunes, new markets - both dark and bright - it provoked thought from academics, policymakers, artists, social activists, rich and poor, from Iceland to South Africa, from the Americas to the far East.

However, after almost 10 years from its inception the first cryptocurrency of the 21st century, for some also against the social emancipatory intentions of Satoshi Nakamoto, did not deliver the promise to become a new widespread global means of exchange to free humanity from monetary and economic
crises. By contrast, it became the quintessential store of value for the millennial generation. The Yetta Foundation has the ambition to fill this gap, to be adopted not only as a store of value, but also, and more importantly as a widespread means of exchange to lubricate the wheels of the public sector, boost turnover for NGOs and social enterprises to help addressing societal challenges in the current era of epochal changes that the planet is going through.

The Yetta Foundation aims at enriching both brains and bodies, but it also aims to maintain the broken promise dear to Satoshi Nakamoto. We aspire at distributing the power of money potentially to everyone able to connect to the internet. With its approach inspired by the original genuine attributes of Bitcoin, Yetta expands the journey further to build a new protocol whereby consensus is reached among the participants to the network enabling them to decide where and how to allocate the power of money adding different qualities and ethos to the digital ecology of money.

Yetta firmly aspires to distinguish itself by grounding its design features on the pillars of both capitalism and socialism with a conscious approach to monetary innovation. By harnessing the power of Blockchain technology, Yetta takes the best from these two traditionally opposed political ideologies and economic models in order to go beyond the state of the art in the Blockchain technology field in a meaningful and impactful manner.

8 The yetta (ý) foundation

The yetta (ý) foundation, a Swiss nonprofit foundation, introduces a Rhizomatic monetary system that expands economic activity, encourages trade, fosters job creation, and raises education and living standards throughout the world. Our missioned to advance social and human development and economic wellness leveraging disruptive and transformative Blockchain technology, smart contracts, and similar innovative technologies.

The yetta foundation is a progression from the current modern-day system of vertical institutional “money powers” focused on betterment of the central authority at the compromise of their constituents. The yetta foundation proposes a new paradigm of thought around community incentivized participation in a global and decentralized monetary system, yetta (ý).

In the new digital ecology of money, we accept modern-day banks and financial institutions as constituents and enablers of service and not as policy constitutionalists. Our monetary policies are constructed from a horizontal perspective aimed at global acceptance, community enrichment, and financial advancement.

yetta (ý) is a global innovation, inclusive of all – decentralized, open source, society empowered, trade enabled, progressive policies with a conscious outreach to the unbanked and to developing economies.

yetta (ý) is a Hebrew name meaning “ruler of the household,” where, in this context, ruler is money and household is the global economy.

8.1 Dyne.org and DYNDY

Dyne.org is a non-profit free software foundry with more than 10 years of expertise in developing tools and narratives for community empowerment. Code is their literature: building media architectures to
communicate, interact, and inspire each other. Their research is interactive and engaging and their development is open source.

Dyne’s DYNDY is an effort at building a Pattern Language for Alternative and Complementary Money Systems to inform and empower grassroots communities with concepts and tools to overcome scarcity, instruments and reflections for the Exodus from proprietary money.

DYNDY is comprised of researchers and practitioners in the fields of philosophy of economics and technology, activists and hackers, developers and visionaries.

As contributors and supporters of Dyne.org and DYNDY, we share in their vision to weave diverse networks of values that are sustainable, resilient and socially responsible.
9 About our authors

9.1 Darrell Hubbard

Darrell Hubbard is an experienced technologist, an innovator, and a business architect.

At age 21, he was the youngest USA Expert within the American National Standards Institute (ANSI) to represent the United States of America internationally in proposing and negotiating various Internet-related standards within the International Standards Organization (ISO).

As a Chief Architect with AT&T Bell Laboratories, he represented AT&T and served as a member of the National Institute of Science and Technology working on the release of the TCP/IP Protocol.

Darrell also served as a Chairperson in the International Standards Organization (ISO) for the development of deterministic testing methodologies for distributed computing standards.

Darrell started college at the age of 16, completed his Bachelors in Computer Science at the age of 18, and his Masters in Computer Science at the age of 19.

Darrell also has a Master’s of Business Administration (MBA) from Harvard Business School.

Darrell currently serves as the Chief Technology Officer of Vertron Corporation, and a founding Board Member of Yobi Capital Fund Corporation.

9.2 Marco Sachy

As a Blockchain designer at Dyne.org “Think and Do Thank” in Amsterdam since 2011, his work focuses on the nature of money and decentralized currency and payment systems design.

He designed the Freecoin Wallet within the works to build two Collective Awareness Platforms for Sustainability and Social Innovation funded by the European Commission: Decentralised Citizens Engagement Technologies and Poverty Income and Employment News (PIE News).

He is a renown public speaker in various contexts - academic, business, social activist, cultural and policymaking, for instance at the United Nations Institute for Social Development.

Marco is the main curator of the monetary observatory DYNDY.net, an effort at building a Pattern Language for Alternative and Complementary Money Systems to empower grassroots communities with tools to overcome scarcity, instruments and reflections for the Exodus from proprietary money.

Marco holds a Master of Arts in Philosophy and Economics from Erasmus Universiteit Rotterdam; and a PhD candidate in Critical Management Studies at University of Leicester School of Business.

Marco’s research and development efforts have advanced the critical thinking around the ecology of money and the adoption of Blockchain technology in the social activism domain. He recently submitted his PhD dissertation "Money for the Common Wealth of the Multitude: Toward a User-managed Currency and Payment System Design"
Annex 1 – European Union Commonfare: the first testbed for the Yetta Protocol

A-1 The context: the Commonfare Platform in the PIE News project

The Yetta Protocol is an output recommendation for the monetary experimentation in the works of a three year Collective Awareness Platform for Sustainability and Social Innovation (http://capssi.eu/) funded by the European Commission, the PIE News project (http://pieproject.eu/) and its digital platform Commonfare.net (http://commonfare.net/). The consortium forming the project is composed by: University of Trento (Coordinator), Basic Income Network Italy (Italian pilot partner), Centre for Peace Studies (Croatian pilot partner), Museu da Crise (Dutch pilot partner), CREATE-NET, Stichting Dyne.org, Abertay University, and Madeira Interactive Technologies Institute.

Within the specific context of monetary innovation, the goal is to assess to what extent the Blockchain technology could scale and sustain in the long-term income generation opportunities and fund education and training, and provision basic income for the millions of people who are poor, experience lack of income and unemployment (henceforth: PIE conditions) within the 28 Member States of the European Union. The PIE News project began in July 2016 and is funded through June 2019 (GA 687922). Real world testing of the Yetta Protocol in the Commonfare.net platform is planned to begin in the first quarter of 2018 in three pilot sites Italy, the Netherlands, and Croatia. The formulation of a pilot schedule for all 28 countries within the European Union is underway.

The general goal of the PIE News project is to adopt the highly innovative approach of public design to prototype the Commonfare.net platform together with pilot participants in order to supplement the existing public measures contrasting PIE conditions in Europe. The Commonfare.net platform will be a dramatic change for the new poor in Europe allowing them to inform and to be informed about public measures contrasting poverty, to share good practices on how to cope with their situation, and to find support in networking activities able to bring value to their everyday life. The overarching ambition is to pilot solutions that can test the commonfare as a new economic model that leverage the network effects and the collaborative co-creation of solutions to cope with difficulties in everyday life.

Poverty is indeed a huge social problem in contemporary European Union. According to Eurostat (2014), there are over 120 million of people at risk of poverty or social exclusion, accounting for almost 26% of the European population. Despite the support provided by the Member States, around 17% of these people remain at risk of poverty even after social transfers by the welfare states. Moreover, the percentage of the population in condition of severe material deprivation has been growing from 9% in 2008, to 10% in 2013. The situation differs from country to country: new Member States show a very high and stable level of material deprivation (around 20%), while the Euro-area countries show lower but growing levels of material deprivation. In some countries, such as Italy, material deprivation has almost doubled from 2008 to 2012 reaching a peak of about 14%. This trend clearly shows that the conventional welfare measures adopted by the Member States are insufficient and there is a need for new tools to supplement existing measures.

The PIE News project aims at siding conventional welfare state measures with an innovative approach that harnesses the collaborative power of digital technologies. The goal is to improve the life conditions of the population at risk of poverty through the reinforcement of their collective awareness on how to deal with their daily problems. From this point of view, PIE News will be a ground breaking collective awareness pilot for bottom-up participatory innovation paradigms. It entails informing people in need,
providing them with storytelling capabilities to share bottom-up strategies to cope with their difficulties, and supporting the emergence of peer-to-peer sharing of services. If in a few years only 1% of the population at risk of poverty will benefit from PIE News, then more than 1 million European citizens will see their life improved.

The project will follow user-driven design, research and innovation approaches merging online reputation systems with digital currencies, to pave the way for the collaborative definition of new commonfare practices and the Yetta Protocol at becoming the technological enabler of such a new approach to economic development. The most promising and innovative of these practices in terms of reputation acquired, digital currency mobilized, and outreach toward stakeholders - e.g. philanthropists, NGOs, Higher Education Institutions, policy makers, etc. - will be supported in scaling up at a national and European level through event participation and network building in order to maximize the project impact by building the conditions for the sustainability of Commonfare.net beyond the funding of the PIE News project by the European Commission.

A-1.1 The Societal Challenge: Contrasting New Forms of Poverty

Across Europe there are social groups that are particularly at risk of poverty or social exclusion, and the European Commission identifies them as “women, young people, people living in single-parent households, lower educated people and migrants.” (Eurostat, 2015). However, due to the enduring crisis conditions and the insufficiency of social policies in some EU countries (Cantillon, 2011) some new forms of poverty have turned up – also triggered by transformations in the labor market that have accelerated during the crisis (Jenkins et al., 2012). Indeed, before the crisis, the most common factor triggering a situation of poverty was the exclusion from the labor market and hence a lack of income, today there are several other factors at play.

A first relevant factor is the type of labor contracts and the spread of precarious conditions (Standing, 2013; Fumagalli, 2013), which lead to discontinuous income and unstable jobs. Current research also shows that women, young people and migrants are the groups more affected by precarious conditions (McKay et al., 2012). A second factor triggering poverty in many European countries, are the decreasing wages characterizing the last years, even for stable workers. Wages have not been able to maintain purchasing power and, as a result, the amount of working poor has quickly been rising in Europe (Fraser et al., 2011). A third factor is linked to the deteriorating labor market conditions for early entrants (e.g. unreported jobs, unpaid jobs) and early school leave (e.g. school dropout) which together have been contributing to the emergence of the phenomenon of NEETs, that are young people not in education, employment or training (Eurofound, 2012; Fumagalli, 2013).

Last, a fourth factor is the growing number of people who do not (or no longer) qualify for social safety nets because of the enduring crisis and the declining adequacy over time of those nets (such as unemployment benefits and social assistance, e.g. Nelson, 2013).

We will refer to these four social groups as the “new poor” (Bauman, 2004), as the forms of poverty which are triggered by these factors differ from the ones traditionally related to a lack of employment. In fact, the affected people do not necessarily need to be outside the labor market although a prolonged expulsion from the labor market or the educational system may cause long-term marginalization. The main needs of the new poor relate to the access to a primary income but also to a cluster of social services, which has to do with housing, training, or mobility. Addressing these needs requires novel and unconventional approaches, like house-sharing, peer-to-peer training, ride-sharing, or access to information about skill acquisition. These novel approaches can beneficially be fostered with digital
technologies, sidelong the conventional welfare state approaches and promoting the emergence of new economic models, such as the implementation of the Yetta Protocol on Commonfare.net.

One of the most challenging tasks of the Commonfare project is turning a research and innovation project into real social change. As we explained in the white paper above and will advocate in the next section, the Yetta Protocol can be thought of in this contexts as a new way to process the allocation of money by the philanthropist to the economically disadvantaged, whereby both parties win by generating a self-reinforcing and transparent dynamic apt to insure the long-term sustainability of the Commonfare.net platform and its philanthropic model for welfare provision and economic development.

A-2 The case for piloting the Yetta Protocol on Commonfare.net

By virtue of the ethos and features of the Yetta Protocol that we presented above in the main body of the white paper, we believe that the most promising first implementation falls within the scope of a EU funded research and technological development project, namely the PIE News Project and its participatory Commonfare.net platform. As it proposes a solution to the dichotomy between capitalism and socialism, the Yetta Protocol opens a new space for the manifestation of the economy of the Common, i.e. to fuel Commonfare as a self-sustaining economic model. We are proposing to tap into the philanthropic resources delivered within capitalist dynamics in order to build a social economy at the advantage of Commonfare.net pilot participants and, by doing this, to offer to the PIE News project a concrete way to scale to the whole of the European Union with long-term sustainability.

According the Hardt and Negri the Common is “in the paradoxical position as being a ground or presupposition that is also the result of the process.” (Hardt and Negri 2009: 123) In this view the Yetta Protocol supplies monetary tools, i.e. smart contracts to frame a financial institution of the Common funded by philanthropy, in which the money coming from the capitalistic sphere addresses the societal challenges introduced in the last section. In particular, as it happens in the dynamic of both material (goods) and immaterial (services, codes, languages, habits) production of the Common, money contributed by philanthropists is the presupposition, the ground or input, to develop the social economy, which is the result, or output of this upward spiraling economic process.

With the Yetta Protocol, provisioning people in PIE conditions with a basic income or helping them in their educational and economic development becomes profitable thanks to the Blockchain technology: this is our way to interpret Hardt and Negri’s definition of the Common for building a sustainable economy on the Commonfare.net platform that can scale potentially in all the European Union.

The main reason why Commonfare.net is the best candidate for the Yetta Protocol is that this social capitalist approach to tackle sustainable development goals is designed to address PIE conditions in a scalable way projected in the long term. Indeed, the Yetta Protocol offers a model whereby relevant stakeholders in Commonfare.net could meet their objectives in that the Yetta Protocol offers a self-sustaining approach to economic development. It addresses PIE Conditions, because it implements a business model whereby poverty, lack of income and unemployment can be tackled systemically by offering smart contracts for basic income funded by philanthropists, career income in both private (social enterprises) and third sectors (NGOs) together with smart contracts for funding higher education, vocational training and internships. Moreover, as a means of exchange yetta can boost trade within and without the Commonfare.net platform as a complementary line of credit for participants.
In this view, the Yetta Protocol will be piloted with informal organizations advocating new economic strategies to counteract precarious work with self-generation of income as for Macao in Milan, career development for freelancers and co-working spaces members in Amsterdam, benefits recipients in NGOs in Rotterdam and Den Haag together with civic associations in Croatia. In all three countries, this approach will be introduced also within education institutions and professional training organizations. In our view, the Yetta Protocol can offer to all of these entities, and the people animating them, a way to better both their income generating and skills building capabilities.

More in general, the Yetta Protocol could create smart contracts to manage the funding and implementation of other anthropogenetic projects and activities according to the definition of Commonfare, whereby contributions from philanthropists could fund initiatives that take care of the commons and create commonwealth to foster human development in the employment, housing, education and cultural sectors.

Secondly, from the standpoint of the CAPPSI research and outcomes, by piloting the Yetta Protocol the PIE News consortium will test the possibilities to go beyond the state of the art in the field of bottom-up monetary innovation for the social good. More in concrete, if the pilots will be successful, it will be possible to not only scale this model to the remaining 25 Member States of the Union, but also to provide both funding opportunities and long-term success to other projects in the cluster of Digital Social Innovation (https://digitalsocial.eu/), for instance in the field of e-participatory budgeting and the overall transparency within the public administration.

Thirdly, the Yetta Protocol offers a philanthropic model for economic development that could make Commonfare.net sustainable in the long term. Indeed, the Yetta Protocol is designed in order to scale for including all the 120 million people living in PIE conditions identified by Eurostat who reside in the 28 Member States of the European Union as it leverages the capitalist economic model with an ethos explicitly framed to address societal challenges in the Commonfare ecosystem.

This provides a self-reinforcing mechanism to the access of monetary resources by tapping into the periodic contributions of philanthropists who are incentivized to purchase yetta. As we showed above, by doing so they can choose to directly contribute monetary resources or to give a percentage of their speculative gains generated by holding yetta and enjoy their increase in value on cryptocurrencies exchanges to fund basic income, employment, internships, training, and education opportunities.

*Below is a schematic representation of the interaction among the Yetta Protocol, the Freecoin Wallet and the Commonfare.net platform on one side together with the Yetta Blockchain on the other.*
A-3 Application to Pilots and Upscaling Schedule

In the following subsections, we will distinctly present the scenarios for the adoption the Yetta Protocol in the pilot countries taking part to the PIE News project. Apart from the desirable implementation of yetta smart contracts for Philanthropist-based Basic Income, which can be adopted by each pilot community as we will exemplify more extensively in the Italian pilot, in the following, we will present the specific issues to tackle in each pilot context as they emerged through the fieldwork research performed by both pilot partners in Working Package 2 and by Working Package 3 partners in the three pilot sites in Italy, Coratia, and the Netherlands (D2.1 - http://bit.ly/2nSTxHY and D3.1 - http://bit.ly/2fY5yl). We will then show how the Yetta Protocol is designed to address such issues. Pilots will take place starting from the first quarter of 2018 and will last for one year.

We intend to upscale the adoption of the Yetta Protocol to the rest of the EU Member States starting from the end of 2018, when the tools will have past prototyping tests with PIE News pilot participants. In particular, we will start from the Eastern and Southern countries that entered the union more recently or that experience more urgency to address PIE conditions, especially, Greece, to then include more advanced economies in the North of the Union. This does not mean that the schedule can be amended as for example Finland is in our opinion a perfect candidate for the adoption of the Yetta Protocol in that Kela, an independent social security institution in Finland started in January 2017 a study to assess the impact of the provision of universal basic income.

A-3.1 The Yetta Protocol in the Italian Pilot

In this section, we will focus on the possibilities that the implementation of the Yetta Protocol can offer to the participants in the Italian pilot, i.e. the members of the precarious artist collective at Macao, an occupied building in Milan. Macao is an informal organization in which a group of people come together to cooperate and collaborate in labor, political, social and cultural spheres. It emerged in 2011 in response to the precarious working conditions of cultural workers in the arts and entertainment industries in Milan.

In practice, the space is run informally by the people involved. Moreover, it hosts co-working spaces, events, exhibitions and workshops while it is looking into expanding the network across other spaces in the city, which align with similar values by sharing resources, equipment and skill-sets.

This extremely creative and socially committed group of artists in the affluent City of Milan self-organized to find a way to implement Commonfare in order to generate basic income for the members while managing the spaces and activities that they promote to the general public. Their way of operating in the locus where art, economy and politics cross can have far reaching consequences for other groups such as Makers and FabLabs scattered around the globe. For this reason, we believe that the pilot on Commonfare.net is a great opportunity to optimize Macao's funding, managerial and administrative capabilities with the adoption of the Yetta Protocol and the Freecoin Wallet.

A-3.1.1 A smart contract for participatory Basic Income

In this first use case, Italian pilot participants will test the smart contract for the provision of basic income in euros according to their stated allocation rules. The revenue in Euros is generated through public events organized at Macao on a monthly basis: theatre shows, exhibitions, music concerts, Yoga classes and the like. To access basic income on a monthly basis, members at Macao not only organize events to
raise the money, but they also have to participate to at least two of the four weekly assemblies. In this way organizers wished to link basic income provisioning to the participation to the management of the common good of the collective discussed indeed during weekly assemblies.

In particular, members and groups organize events and 40% of the revenue goes to Macao’s common account while the remaining 60% is shared among members and groups organizing the events. The basic income comes from the 40% shared in common within the artists collective among this who also take part to assemblies. In their initial trials conducted from November 2016 to the first two quarters of 2017 using spreadsheets, organizers allocated between 350 and 500 euros in cash per month to eligible recipients of the basic income.

Commonfare.net, in conjunction with the Yetta Protocol, will be implemented to automate events organization (calendar, booking of spaces within the building, etc.), cash flow of the euro revenue generated by the events, tracking participation to weekly assemblies and of course the automation of the release of funds for basic income based upon the multi-signature requirements each month. Furthermore, a tailor made complementary currency adaptor could be implemented to allow Macao members to run their internal currency - Commoncoin - to pay each other for the performance of services needed to run daily continuous functions (secretary, communication, building maintenance, etc.) and autonomous functions (organization of events by members and groups composing the collective).

A-3.2 The Yetta Protocol in the Croatian Pilot

At the light of the research conducted in D2.1 and D3.1 and the feedback from Croatian pilot partners, we acknowledged that basic income in the form of complementary cryptocurrency is not what users demanded in the focus groups. On the contrary, according to Croatian pilot partners, prospective pilot participants - in particular the unemployed youth - expressed a pressing need that they had and which they hoped the platform could help them meet, i.e. income generation in fiat currency. The Yetta Protocol and economic model is designed to achieve this goal as requested by prospective Croatian pilot participants.

In Croatia, Centre for Peace Studies - together with other relevant organizations and education institutions - has the possibility to become financially self-sustainable with the adoption of the Yetta Protocol. Initially resources from contributors will be allocated to Centre for Peace Studies and some other 1000 NGOs that the former will suggest for Croatia. In this way Commonfare.net will offer ways that lead to employment and education opportunities to the Croatian youth unemployed participating to the pilot.

A-3.2.1 A smart contract for Career Income in the Croatian context

With the smart contract for Career Income, the Yetta Protocol will process philanthropist contributions by issuing a smart contract for Career Income to manage an NGOs payroll reserves with the Freecoin Wallet. As a result, it will allow Croatian NGOs to post jobs to hire young unemployed, manage payroll deposits and approve timesheet and rate young workers over the Yetta Blockchain. As young workers apply for jobs, complete and manage their job tasks and fill their timesheet, the wages will be automatically paid from the smart contract for Career Income to their bank accounts.

A representative of either the non-profit or the social enterprise must digitally sign off on the completed work each week before the worker is paid on their Freecoin Wallet instance by the smart contract. In particular, the representatives will grade the quality of their work in terms of punctuality, attitude, and
performance. The young Croatian workers will be rewarded their wages as a percentage of their overall performance while they will review performance ratings. Both employers and workers will review the quality of the performance according to the rules of the yetta Reputation System to which they will previously agree to abide during the application and hiring process. NGOs and social enterprise will enjoy smart contracts and digital wallets as tools that will allow them to both manage their payrolls and track young workers’ performance. Also, young workers will rate their employees.

The same process can be initiated in the context of internship in local companies, whereby philanthropist contributions go to fund the internship of young Croatian unemployed in order to build their talents. Also, in this case the Yetta Protocol will issue a yetta smart contract for Career Income. The goal is to lower the current trend, whereby increasing numbers of young Croatians leave their country to find a job abroad.

A-3.2.2 A smart contract for academic scholarships in the Croatian context

A second pressing need expressed by prospective pilot participants in Croatia is to create opportunities for education and skills building for the youth unemployed. Hence, for the Croatian pilot, because the target group are unemployed youngsters, it will be very important that the platform offer opportunities for building and improving skills in the context of both higher and vocational education (training). As we showed in the text above, the Yetta Protocol can address this need. Here we will exemplify how the smart contract could be implemented in the case of higher education.

There are 5 main Universities in Croatia, but apart from the legitimate application’s hustles, entry barriers manifest in the form of corrupt and clientelist selection processes. In this context, depending on the level of the contribution in either fiat money or cryptocurrency, philanthropic contributors will be rewarded with yetta, and contributions will be sent to a yetta Account for Endowment Reserves, for instance co-managed by Yetta Foundation and University of Trento. After the total contribution to fund student scholarships is processed, the Yetta Protocol will issue a scholar smart contract to Centre for Peace studies in order to avoid both corruption and clientelism typical in the Croatian context.

Therefore, from the academic side the yetta scholastic smart contract will make scholarship payments, manage endowment deposits and upload and / or approve a student’s academic performance. From the student’s perspective, once the application for scholarship is approved by Centre for Peace Studies, the yetta scholastic smart contract will assist the student under the supervision of Centre for Peace Studies in concert with the higher education institution of choice to complete and manage academic performance and review academic ratings while the student will study in the higher education institution of their choice. In this case, the Freecoin Wallet will store both monetary and academic grades balances. This process can be made transparent also from the point of view of the philanthropic contributor(s) as they will see the progress, or lack thereof, of the student in real time and in transparent way on the Blockchain, which will store students’ grades potentially as a service that universities could adopt for all students. As stated above, this process can be applied also in the context of vocational education.

Hence, with the Yetta Protocol young unemployed in Croatia will be able to apply for a scholarship funding their tuition to go to one of the 5 Croatian universities. Alternatively, they will be able to apply for a vocational education path. In turn, thanks to the intelligent and transparent process of philanthropic contributor(s) allocation elicited in the white paper above, they will be able to find a job, for instance in the NGO and social enterprise sectors or be paid to build their talents during a summer an internship in a private company of their choice. As for the career income smart contract, all these elements offered by the Yetta Protocol can also in this case lower the possibilities of young unemployed leaving their country
to find opportunities abroad, which is one of the problems highlighted by the research conducted on the field by Croatian pilot partners.

A-3.3 The Yetta Protocol in the Dutch Pilot

In the Dutch pilot context, pilot partners together with Working Package 3 partners conducted fieldwork research with participants from different backgrounds. In the Netherlands, pilot partners can liaison the Yetta Protocol to prototype it together with the three different group types selected as pilot communities - freelancers, benefit recipients and non-Western migrants - in the PIE News project. For instance, in the last co-design workshop held in Amsterdam on the 9th of August 2017, participants varied from welfare recipients to freelancers/precarious workers and from contracted workers to single mothers participated. Some participants came from a non-Western background. Indeed, the contents of the report on the workshop redacted by Dutch pilot partners show a variety of elements that emerged from workshop activities. Such elements pointed to the suitability of the Yetta Protocol social capitalism model for the Dutch pilot.

First, participants expressed the willingness to have a currency functioning as a store of value and means of exchange: yetta is exactly that. Secondly, some participants agreed that it would be desirable to be rewarded for the provision of services and other added that they would like to be rewarded by accessing services, including money. As we will show in the subsections below, the Yetta Protocol can enable Dutch pilot participants to both generate and increase their income in fiat currency (euro) for the services that they provide in either the private or the NGOs sectors.

Thirdly, other elements emerged from the rounds of the Commonpoly game – a game inspired by the famous Monopoly game, but transplanted in the context of Commonfare.net: the necessity of basic income coming from a bank or, even better for some, from a common, philanthropic and sustainable fund like a yetta Economic Development Fund for income generation, to which pilot participants could apply. In addition, pilot participants expressed the need to have a currency system and economic model for Commonfare.net, which provided the possibility to transact currency also outside the platform, such as Euros. All these elements align with the Yetta Protocol proposal: the creation of a fund built with the resources coming from philanthropist contributions and the possibility to either sue yetta as a means of exchange or cash it out for euros on crypto exchanges.

As the reports concludes, in general groups appeared comfortable thinking about money and alternative ways to go about it. More in particular, participants advocated for the ability to build something bigger together, something that go beyond the individual need for a bike repair or the individual need for childcare. As Lena, one of the workshop participant put it: “One system will not exclude the other. But one system will affect the other. The challenge is to create something that is not operating within a niche.” In this last sentence, Lena expressed the features of the Yetta Protocol pretty precisely: to have a system for Commonfare.net that does not operate in a niche and that is able to make the most from different systems. Indeed, the Yetta Protocol is designed to scale for millions of participants by tapping into capitalist resources with a socialist ethos. In the next subsections, we will exemplify how the Yetta Protocol, in concert with the Freecoin Wallet, could be piloted in the Dutch context.

A-3.3.1 A smart contract for Career Income in the Dutch context

1) Freelancers in Amsterdam – yetta smart contract for Career Income in the private sector: in this use case, the Yetta Protocol will automate both timesheet and payroll functions stored on the Freecoin Wallet for freelancers working in the private sector. In particular, the smart contract will allow them to manage
their job tasks and payroll deposits with the possibility to issue invoices and connect payments to their bank accounts. The smart contract can work both for individuals and co-working spaces. Although it can function as a store of value as for the philanthropist community of contributors, Dutch freelancers could use yetta as a means of exchange to pay each other in the freelancer network in Amsterdam, and possibly in the whole of the Netherlands.

2) Benefits recipients in Rotterdam and non-Western migrants in The Hague — yetta smart contract for Career Income in the NGO sector: similarly for the income generation smart contract described in the Croatian context above, also in this use case, pilot participants will have the possibility to be hired by NGOs in Rotterdam or the some 300 NGOs in The Hague (http://bit.ly/1GjnoMb), and their services will be paid for by the NGO thanks to philanthropists contributions. Therefore, the requirement for income generation through Commonfare will be met as requested by participants to focus groups.

The Yetta Protocol will process philanthropists contributions by issuing a smart contract for Career Income to manage on the Freecoin Wallet an NGOs payroll reserves an related components such as tasks, time and performance management. As a result, it will allow government registered non-profits and civic organizations in Rotterdam and The Hague the ability to post jobs to hire human capital resources, manage payroll deposits and approve timesheet and rate workers. As social workers apply for jobs, complete and manage their job tasks and fill their timesheet, the wages will be automatically paid from the smart contract for Career Income.

As described in the Croatian context, also in this case a representative of the non-profit must digitally sign off on the completed work each week before the worker is paid by the smart contract. In particular, the representatives will grade the quality of their work in terms of punctuality, attitude, and performance. The worker will be rewarded their wages as a percentage of their overall performance while they will review performance ratings. Both employers together with benefit recipients and non-Western migrant workers will review the quality of the performance according to the rules of the yetta Reputation System they decided to abide to during the application and hiring process.

A-3.3.2 A smart contract for academic scholarships in the Dutch context

Also, the Dutch context, pilot participants will be able to apply for both higher education and vocational training courses. In this context, the yetta scholastic smart contract could become the perfect candidate to help curbing student debt accumulated through loans to pay tuitions and housing in expensive cities such as Amsterdam, Rotterdam and The Hague. Since to our knowledge, the higher education system in the Netherlands is not prone to corruption and clientelism in the selection process of prospective students, during the pilots in the three cities, we will approach both universities and scholarship funds to inform them about the pilot and propose them to collaborate to make it become real.

For instance, prospective students attending their last year at high school will be asked to apply on Commonfare.net to receive a scholarship funded by the national and international philanthropist community. Willing prospective students will be given the tools to create a profile on the Commonfare.net platform, tell their story and list the kind of subjects they would like to study, possibly also defining the career they wish to pursue after graduation, either within or without academia. In turn, and in concert with pilot partners, a selection procedure would be defined to put in touch both students and philanthropists and subsequently to award the scholarship.

At this point, depending on the level of commitment of the higher education institution of choice, for the sake of example Erasums Universiteit Rotterdam, a yetta scholastic smart contract would be issued and
it would behave as described for the Croatian use case. The smart contract will make scholarship payments, manage endowment deposits on the yetta Account for Endowment Reserves, also in this case possibly co-managed by yetta foundation and University of Trento. Furthermore, the Scholar smart contract will upload and/or approve a student’s academic performance all in interaction with the Freecoin Wallet. From the student’s perspective, the yetta Scholar smart contract will assist the student under the supervision of either staff or tutors from Erasmus Universiteit Rotterdam to complete and manage academic performance and review academic ratings.

This process can be made transparent also from the point of view of the philanthropist contributor(s) as they will see the progress, or lack thereof, of the student in real time and in transparent way on the Yetta Blockchain, which will store students’ grades potentially as a service that universities could adopt for all students. As stated for the Croatian case, this process can be applied also in the context of vocational education. As a matter of course, this process can be implemented in the Italian pilot and, possibly, scale in all the higher education institutions of the European Union willing to adopt it as a new best practice.

A-4 PIE News Conclusions

In this Annex, we showed the potential of the Yetta Protocol applied in real cases within the context of the design and implementation of the Commonfare.net platform. As we stated in section 2, the Yetta Protocol presents three main advantages compared to alternative candidates to pilot the monetary solutions for the Commonfare.net platform. First, it can structurally address the needs of the communities participating in the pilots of the PIE News project as it tackles the issue of poverty, lack of income and under- or unemployment.

Secondly, from a research and technological perspective, the Yetta Protocol and the Freecoin Wallet go beyond the state of the art in the domain of cryptocurrency and Blockchain technology designed for the social good. Thirdly, by leveraging the capitalist economic model in a philanthropic fashion to address societal challenges, the Yetta Protocol is designed to scale beyond the pilot communities of the PIE News project to involve all the 120 million people living in poverty or at risk of poverty within the European Union in a horizontal and bottom-up way, without increasing government spending.

For these reasons, we strongly recommend pilot the Yetta Protocol to address such important societal challenges, which correspond to the achievement of various UN sustainable development goals at once: no poverty, no hunger, good health and wellbeing, quality education, and decent work to achieve sustainable economic growth. This overarching achievement could become a landmark experience that could be then replicated in the rest of the world, especially in Sub-Saharan Africa and Asia where the urgency to address PIE conditions is the highest.

During our research of several Blockchain technologies, cryptocurrencies, and smart contract protocols we have concluded the yetta social capitalism protocol is most aligned with our mission and values and offers the most comprehensive and scalable solutions for the enablement of social and economic development of the revolutionary digital economy on the Commonfare.net platform.
ANNEX 2: yetta (ý) YTA distributions

1.1. Contributions given to Yetta Foundation in exchange for yetta (ý) tokens (YTAs) shall be considered as financial contribution. Contribution can be done in Fiat Currency (i.e., Euros, US Dollars), or in Digital Assets. Failure to follow the instructions on the Website may limit, delay, or prevent a user from donating. Users understand and accept that they make a contribution into a smart contract system on Yetta Blockchain and receive YTAs in exchange.

1.2. There will be in total 125,000,000 YTA tokens available (“Total YTA Number”). To stimulate the continual demand for yetta (ý), all Yetta Protocol smart contract will complete monetary transactions in YTA tokens.

1.3. YTA tokens shall be distributed in the following manner:
   a. 75% of the Total YTA Number shall be distributed to the public in accordance with paragraph 1.6 (“Total Public Number”),
   b. 10% shall be reserved for early stage private investors, advisors, and strategic partners.
   c. 10% of the Total YTA Number shall belong to the Yetta team, namely to the developers and management team, and division among them shall be made by the discretion of the Yetta Foundation, whereas this allocation shall be considered as remuneration for the services provided for the benefit of the Yetta Foundation.
   d. 5% to Yetta, whereas 3% are envisaged to be used for community incentives, and 2% are reserved for cost of bounty payments.

1.1. Yetta reserves a right to an emergency stop functionality to stop the distribution process. Use of this functionality shall remain in discretion of Yetta and shall only be used in limited situations, such as, but not limited to: (i) serious security issue detected, (ii) serious network performance issue, depriving all users of equal treatment, (iii) any type of material attack on the YTAs, the Platform, Website or Yetta network.

1.5. The funds raised from the YTA distribution will belong to Yetta and will be used exclusively for the global growth and development of the Project.

1.6. Distribution of tokens, defined in paragraph 1.3(a) shall be conducted as follows:
   a. TGE distribution

      There will be in total 12,500,000 YTA tokens available during the Presale and Token Generation Event (TGE) (“Total TGE Number”). The Presale starts on 1st October 2017 and continues until the commencement of the TGE. The start and completion dates are subject to change without notice.

   b. Presale distribution

      Yetta will be offering the Total TGE Number to invited purchasers at a bonus incentive schedule outlined in paragraph 1.3(e). Such distribution shall be completed prior to TGE distribution.

   c. Private distribution

      Yetta shall through private distributions offer the Total Public Number, reduced by a number of YTA tokens, distributed in accordance with indent (a). Private distributions will be sold at
prevailing market rates such that increasing the total token supply does not materially impact the YTA market price. Private distributions are reserved for supporting the continual development of the Yetta Foundation including the financial support for third-party smart contracts development on our platform, and the support of social and civic organizations.

d. Price and token calculation

The initial price for a token will be calculated after the end of the TGE distribution period by the greater of (a) € 10.00 or (b) dividing the Total TGE Number by the number of all paid in Digital Assets. Each of the contributors, who contributed Digital Assets, will receive a number of YTA tokens equal to the amount of Digital Assets each contributor paid-in, adjusted by the applicable bonus incentive set out in indent (e), divided by the price, calculated using the method set herein.

e. YTA Purchase Bonus Incentives

YTA will be offered to contributors with the following bonus incentives:

<table>
<thead>
<tr>
<th>yetta (ý) Purchase Amount</th>
<th>Bonus Incentive</th>
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<tbody>
<tr>
<td>Under € 100.000</td>
<td>10%</td>
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<tr>
<td>€ 100.000+</td>
<td>20%</td>
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<tr>
<td>€ 250.000+</td>
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<td>€ 500.000+</td>
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<tr>
<td>€ 5.000.000+</td>
<td>75%</td>
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<tr>
<td>€ 10.000.000+</td>
<td>100%</td>
</tr>
</tbody>
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1.7. For the purposes of YTA token price calculation, all payments by the contributors, made in Ether or any other Cryptocurrency, will be converted to Bitcoin. The Conversion rate shall be average conversion rate on the day of contribution, based on average exchange rate of three major crypto exchanges.

1.8. Yetta reserves a right to change the dates, set out in paragraph 1.6 at any given time due to technical or organizational reasons, without any duty to provide explanation to the users or the public. Any such change will be published on the Website.

1.9. All financial contributions will be accepted and processed. There is no (“Minimum Threshold”) that must be reached in order for the public distribution in accordance with paragraph 1.6 to be successful.
1.10. The distribution of the YTA tokens, set out in 1.6(a), is limited to a contribution of 100,000 BTC ("Maximum Threshold").

1.11. Public distribution from paragraph 1.6 shall be executed as follows:

a. Users shall send their Digital Assets to the smart contract address,

b. When

   i. the time of the offering, defined in paragraph 1.6, is over and Minimum Threshold has been achieved; or

   ii. Maximum Threshold has been achieved, whichever occurs first, the distribution is stopped and tokens are sent to each participating user’s wallet address.

1.12. Users, wishing to participate in the token distribution, may be obliged to send their Digital Assets for acquisition of YTAs from a Yetta address wallet, for which they control the private key, whereas such address shall not belong to a Digital Assets exchange. Users will receive their YTAs to the same address, from where they sent the Digital Assets.

1.13. All YTA purchases shall be publicly accessible via the Yetta Blockchain browser or similar.

1.14. YTA distribution will be offered only through our Website, yetta.io, or through Yobifund.com. Other than Yobifund.com, no third-party website or a different provider has been in any way supported, engaged, authorized or endorsed by Yetta and have no relationship in any way with Yetta (ý). The only official and authorized website and YTA token distribution provider is the Website and Yobifund.com. You must ensure that the URL of your web browser indicates that it is using a hypertext transport protocol secure connection (“https”) and that the domain name is correct. Yetta (ý) may partner with third-party service provider to enable easier acquisition of YTAs with digital assets other than Bitcoin.

1.15. Safe for the provision of paragraph 1.12, all contributions to Yetta in exchange for YTA tokens are final and nonrefundable. By participating in the YTA token distribution, you acknowledge that Yetta is not required to provide a refund for any reason, and that you will not receive money or other compensation in lieu of a refund.

1.16. The YTA is not a consumer product and its users accepts explicitly and agree that they are not covered by the consumer protection regulation of any jurisdiction.
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