Growing the Co-operative Economy

Harnessing Cryptocurrency To Drive Significant Growth

(Underline indicates Jan-Feb 2018 edits)

Main shifts:

1. *Towards seeing Holochain as the cryptographic foundation*
2. *Towards a Mutual Credit system rather than an Exchange token*

Purpose

The current capitalist economy is failing to serve the world's people, is failing as an economy on its own terms, and is driving the Earth's terrestrial and oceanic ecosystems towards irrecoverable collapse. Before that collapse happens and to avoid chaos and devastation when it does, there is an urgent need to build a viable alternative and completely independent economy.

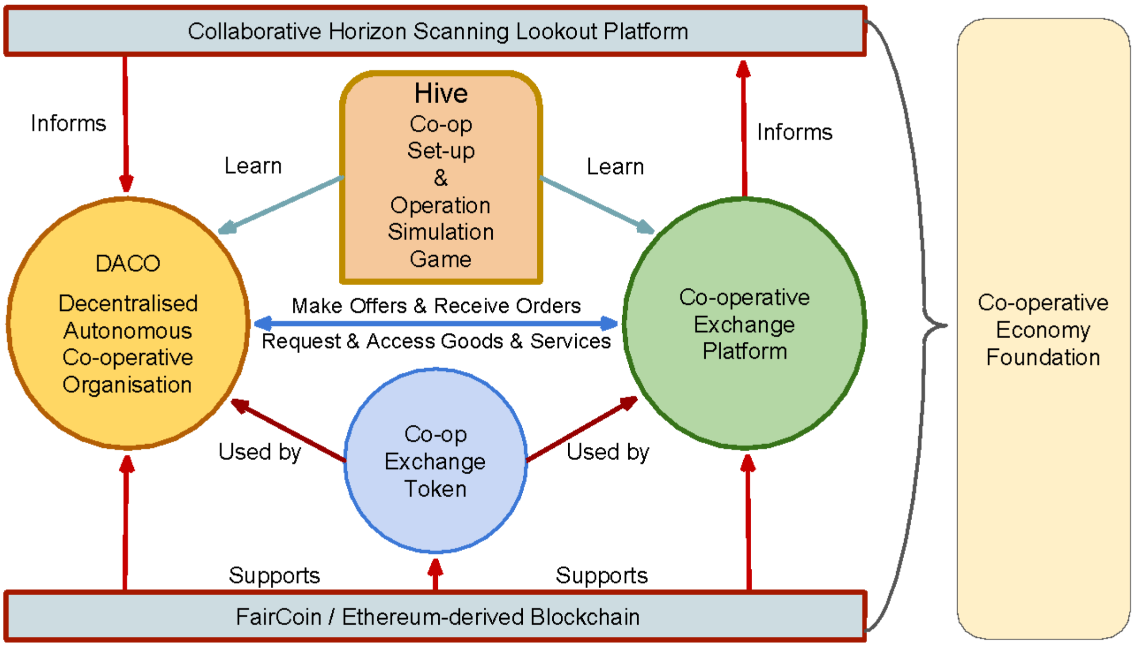
This paper, intended as a starter for discussion and further development, suggests a way to build just such a parallel and independent Co-operative Economy. It won't be easy and it will take time. It will take commitment and resilient collaboration, but those are key strengths of the co-operative movement, rooted in Principle 6, accepted by all co-ops. Growing from this, the Co-operative Economy will need to be in place and operational to provide continued livelihoods when the current economic system fails. This could either be through another economic collapse, which governments will no longer be able to bail out a second time after the economic draining and lack of recovery following the 2007-8 collapse. Or it may finally collapse from its continuing decline, in the process serving fewer and fewer wealthy individuals and driving the rest into poverty. But with the lack of corrective measures since the last collapse and mounting levels of unsustainable debt, the risk of another is increasing, so prudence demands a sense of urgency. Time may not be on our side.

Overview

The following sketches out a proposal for an inter co-operative exchange platform. It suggests that this needs a human superstructure and technology infrastructure. The co-operative exchange platform would be a meta-cooperative with each participating co-operative having a representative voice. However this would, on its own, be insufficient, Additional co-operative learning, new co-op start-up support, monitoring and liaison with the wider social and political environment and overall guidance driving the development of the co-operative economy as a whole. Thus a management and governance superstructure ia needed to create and develop a fully functional system capable of achieving such a far reaching goal as a viable independent co-operative economy. This is here referred to as the Co-operative Economy Foundation.

The technology infrastructure would have three layers, the exchange platform for inter-co-operative exchange of goods and services a sthe top layer, a mutual credit system supporting the exchanges as the mid layer, and distributed peer-to-peer blockchain based cryptocurrency such as Holochain, as the base layer. This would provide a technical infrastructure base layer. This would make it possible to build a co-operative economy that is both fair and provides a sustainable livelihood for all, while keeping within the carrying capacity of the Earth.

The diagram below illustrates the elements of this proposal and how they interrelate.



At the base is the proposed mutual credit or Co-operative Exchange Token, which <u>could</u> support <u>the **Inter Co-operative Mutual Credit System**</u> **(Section 1)**, <u>which underpins</u> the **Co-operative Exchange Platform (2)** whereby co-operatives and co-operative members can exchange goods and services. It also tentatively suggests the development of a flexible software system, the **Decentralised Autonomous Co-operative Organisation (DACO) (4)** to help run new and existing co-ops (currently the most speculative part of the proposal). Above <u>these elements</u> in the diagram, there is a proposed software element, **Co-op Set-up and Operations Simulation Game (5),** the function of which is to help introduce new co-operators to the setting up and running of new co-operatives and how these can trade through the Co-operative Exchange Platform using the Co-operative Exchange tokens. This could become a part of Co-operatives UK's Hive function, or alternatively become an element in the Co-operative University - or both.

As part of a mutual exchange system, the Co-operative Exchange Token would, unlike bitcoin and similar blockchain money tokens, not be a tradable commodity, i.e. not exchangeable either with other cryptocurrencies or with government issued currencies. It is suggested that this is essential to maintaining an ultra-stable value for the tokens <u>enabling them to: properly serve the purpose of exchanging goods and services;</u> to avoid them being drawn into the vicissitudes of currency exchanges and the capitalist economy more generally; and to avoid them being drawn down with the capitalist economy in the event of its collapse.

It also leaves the process of token creation free to focus entirely on the balanced development of the co-operative economy, whereby the availability of tokens in circulation is matched by the availability of goods and services offered through the Co-operative Exchange Platform. <u>Tokens are automatically created when new and additional goods and services are offered on the Platform or, under careful control, they may be created by, or allocated to the Foundation to invest in the development of new goods and services to be offered on the Platform, and later to the development of new co-operatives emerging to</u>

address currently unmet requests for goods and services identified in the exchange platform, thus expanding the scale and range of the co-operative economy.

The Co-operative Exchange is a meta co-operative made up of the co-operatives offering their goods and services on the platform. They are responsible for the running, maintenance and enhancement of the platform; for ensuring that the creation of new tokens is in balance with the addition of new offers of goods and services; and for deciding what percentage of new tokens created goes to the members and what percentage of new exchange tokens is passed on the to the Co-operative Economy Foundation of which the participating platform co-operatives are also members.

The two remaining components are the **Co-operative Economy Foundation (section 3)** and the **Collaborative Horizon Scanning and Lookout Platform (6)**.

The Foundation is the driver of the whole system, charged with using a percentage, perhaps as much as 50%, of the new credit created to continuously develop the Co-operative Economy under democratic control. As these can only be spent through the Co-operative Exchange Platform, it ensures that theiir use is maintained. It can be regarded as the members way of granting credit for system maintenance and supporting training, development, desired co-op start-ups and innovation.

The Lookout Platform provides a way for co-operatives as a whole and for specific sectors to continuously monitor changes taking place in their wider operating environments, identifying emergent changes (opportunities/threats) that are relevant to the co-operative economy. Next it provides a space for thinking through and suggesting possible responses to co-ops, and for the Co-operative Foundation to consider if a co-ordinated response is needed. It does this by providing data to help determine where innovation and further co-operative development is needed or whether a media, social or political response is needed. The purpose of the Lookout Platform is to ensure the continued viability of both individual co-operatives, the various co-operative sectors and the co-operative economy as a whole. It thus provides a key continuous learning and innovation function to the system as a whole.

1. Co-operative Exchange Token or Cryptographic Mutual Credit System

Co-X-op (Copex?)

Aims

- To provide an inter-co-operative means of exchange, for all co-operatives and co-operative members, both globally and locally
- To support a significant expansion of the co-operative sector
- To create an independent global economy that is fair, sustainable and supports all who choose to participate
- To provide an independent economy that would act as a safety net in the event of another economic meltdown similar to 2008

Conditions for a Co-op Exchange Token

- As with any form of money, the Co-X-op token is a social construct, but in this case created by and for the co-operative community
- It is essential for the exchange value of the token to remain stable to ensure prices don't have to be regularly changed and to maintain the value of savings and pensions. ~~to ensure the value of tokens is kept steady.~~ This has some consequences.
- The first, and perhaps most radical consequence is that the Co-X-op token should NOT function as a commodity to be bought and sold in currency markets. This additionally protects the value of tokens from the consequences of any major financial collapse.
- Second, a balanced introduction and development of both the token and available goods and services that can be purchased on the Platform using the token, has to be maintained in order to prevent inflationary and deflationary pressures.
- How the Co-X-op tokens are brought into circulation is thus a critical issue.
- The introduction of Co-X-op tokens has to be balanced by the production of goods and services that can be purchased using the Co-X-op tokens
    - Tokens could be granted to co-ops when they first offer goods and services for sale on the Exchange Platform. They would then keep the tokens they receive when they actually sell them.
      (See Appendix 1 Rationale for Giving Away Tokens)
    - In this way, at least initially, the amount of tokens in circulation matches the value of the goods and services available for purchase by tokens.
    - It is further proposed that tokens may be created by the Co-operative Development Foundation strictly as investment to increase innovation and productive capacity in the co-operative sector, conditional on making future equivalent value offers on the Exchange Platform.
- Goods and services are consumed eventually, but tokens remain in circulation - although they may be taken out of circulation on the form of savings. Goods and service offers are therefore only awarded new matching tokens when they are first offered on the platform. Further tokens are only awarded when the overall value of a co-op's offers is increased. At some point in the future, perhaps when it is time to constrain further growth of the Co-operative Economy to keep it within the carrying capacity of the Earth, it will be necessary to stop further creation of tokens.
- A good regulatory system of maintaining balance will be needed, possibly automated from the blockchain data or from the Co-operative Exchange Platform data, including the circulation of tokens through purchases and the flows into and out of savings.
- An overall regulatory principle will be to keep the number of tokens in circulation balanced with the offers of goods and services on the Co-operatives Exchange Platform.
- However, as the aim is to grow the co-operative economy to eventually meet all needs, there will be a significant amount of tokens that will need to be put into circulation to achieve that aim.
- To stimulate growth, more coins can initially be put into circulation than available goods and services on offer as many coins will be held in short or longer-term savings, and only a percentage will be in actual circulation. Further, since tokens are issued to balance offers from existing co-ops, more tokens would be needed in order to grow the size of the sector. Issuing additional tokens for this purpose

would need to be carefully managed, which would be the responsibility of the proposed Co-operative Economy Foundation, regulated by data generated by the Co-operative Exchange Platform.

- The proposed Co-operative Economy Foundation will receive a percentage of all tokens put in circulation – growing perhaps to 50%. Under democratic member control, it will be charged with using its tokens to develop the Co-operative Economy and its infrastructure in various ways:
    - Support for training and innovation in co-op start-ups would be an obvious point of investment.
    - Induction of new members into co-operatives, ideally in alliance with the Co-op College's Apprenticeship programme, together with Hive materials and support. (People could be paid to become members of a co-operative running co-operative induction programmes, e.g. 1/3rd working for a co-op as apprentices, 1/3rd training in co-op principles and practices, 1/3rd, when ready, developing with others a potential co-op startup, using lean startup principles, thus, where successful, increasing available goods and services. Given that lean startup methods can be seen as a specialised from of action research, this could be supported by a specialised version of the Co-op College's Action Research Programme.)
    - Support for innovation and further development in existing co-ops
    - Increasing existing co-ops available goods and services to meet
    - increased demand.
    - Development and maintenance of the Co-X-op token, Platforms and other system software
    - Development of the software needed to support the efficiency and running of co-ops themselves - Distributed Autonomous Co-operative Organisations, DACOs - which can be adopted by new and old co-ops alike. Such software would need to be continuously developed, tested and evolved in close collaboration with co-ops using or planning to use the DACO software.
    - Ensuring complete security across all software development.
    - Developing the Co-operative Exchange Platform/s support for offers and unmet wants (data from the latter indicating as yet unmet needs and hence scope for further co-operative development).
    - Public awareness raising of co-operative values, principles and operations.
    - Projects that promote the Common Good (globally and locally defined) and enhance sustainability.

  The Foundation can of course only use its tokens for these purposes by paying cooperatives to carry them out.

No ICOs!!!

- In line with the non-commodity exchangeability of Co-X-op tokens, there should be no Initial Coin Offerings whereby the tokens are put up for sale to those with money in an attempt to raise cash. The value of the Co-X-op tokens must come exclusively from their acceptance and use by the co-operative community.
- ICO-Ds: Instant Ckiss Of-Death... IF you want to establish your currency as a stable exchange token, don't be tempted by the quick cash
- ICOs are for currency speculators
- ICOs turn the currency into a commodity

- Because of the volatility involved in cryptocurrency commodity trading, it makes a currency's intended prime functions as a means of exchange and a store of value more difficult - if not effectively impossible
- They open the currency to pumping and dumping by wealthy speculators, leading to oscillations in currency value and can potentially break it - (Note the counter values of Bitcoin and Dash: when Bitcoin goes down, Dash goes up - and vice versa. Looks like some wealthy speculators are playing games trading Bitcoins for Dash when Bitcoin is high, pulling Bitcoin down and pumping Dash, then on Dash rising, dumping Dash for low priced Bitcoins, in turn repumping Bitcoins and crashing Dash. While Bitcoin does not appear to seek to be a serious token of exchange, Dash does, but it will have a hard time if its value is linked in this way to Bitcoin's.
- By (inextricably?) linking a Co-X-op token (or Collabor8) to government fiat currencies and bubble cryptocurrencies, it would also risk suffering the same fate as these currencies in the event of another (increasingly likely?) global financial crash. In that event, governments would no longer be in a position to bail out the financial system a second time, given that their economies have not yet recovered from the last bail out. In which case, government currencies would cease to operate - an eventuality that Mervyn King said we were within an hour of reaching in the UK in the 2008 financial crisis, and only avoided by massive (and just in timely!) government financial intervention.
- An ICO would thus jeopardise the Co-X-op's key role of enabling an independent economy able to act either as a safety net in the event of another financial crisis or as a steady growing parallel economy able to first supplement and then eventually replace a gradually failing capitalist economy in which an ever increasing number of people are suffering economic decline as a decreasing number appropriate an ever increasing proportion of the world's wealth.
- An ICO gives away, to those with money, the co-operative community's critical power of being able to create tokens as needed to further the co-operative economy as a fair and sustainable way of meeting its members' needs, which would eventually be the needs of everyone.

- In short: if you want your currency to act as a long term and stable Token of Exchange and Store of Value, then don't let it become a Commodity - it's the ICOD!

Operating Rules

- Co-op Exchange Tokens can only be used within the co-operative economy.
- Co-op Exchange Tokens can only be used to purchase goods and services produced by co-operatives. Therefore the co-operative source of the goods and services must be known and made a condition of the exchange.
- Co-op Exchange Tokens can only be paid to members of a co-operative (for their services). Therefore the co-operative of the recipient must be known and made a condition of the payment.
(Provenance is a tech co-op working with the UK Co-operative G roup to provide fair trade assurance across the supply chain, using a blockchain mechanism. This should be adaptable and integrated to ensure that the above two operating rules are met.)
- Effectively all participants in the Co-operative Economy must be either a Co-op or members of a Co-op, which, in the end it is hoped, everyone would choose to be.

- Co-op Exchange Tokens cannot be treated as a commodity to be bought and sold by any other currency, in order to maintain its complete independence. (However, any co-op or individual co-op member will have to operate with a foot in both the capitalist and co-operative economies until such time as the co-operative economy has developed to the point where it can itself provide all required goods and services - which is the ultimate goal.)
- Co-op Exchange Tokens in circulation must be kept in balance with the available goods and services that can be purchased by them.

Ensuring Co-operative Provenance

The Co-operative Exchange Token would integrate elements of **Provenance's** blockchain based supply checking software to ensure that goods and service offers have been co-operatively produced or provided, and that payment using tokens is only made to co-ops and registered members of co-ops, hence ensuring that the use of the Co-operative Exchange Token is kept strictly within the independent co-operative economy.

Co-operative Exchange Token Creation - Balancing Token Supply & Demand

When a good or service is made available, 'offered', on the Co-operative Exchange Platform (see later), there needs to be sufficient tokens in circulation to purchase it. It is therefore proposed that the 'offer act' causes a number of tokens to be created and put into circulation. These might initially be based on an estimate of the first month's sales, and thereafter automatically re-estimated from the previous month's actual sales for the next month's projected sales. After the first month, further tokens would only be granted for any increases in the goods/services put on offer on the Platform. (See Appendix 1)

The 'grant tokens' are provided to the offering co-op in advance of sales but they additionally receive the tokens generated by the sales as they take place. Should they exceed the projected monthly sales, they receive commensurate additional grant tokens over and above those for the (upgraded) projection of the next month's sales. Conversely, should sales be below projection, the next month's sales projection would be reduced, and the tokens received would also be reduced by the previous month's shortfall.

The token transfers would be automatically calculated and carried out by the Co-operative Exchange Platform.

Use of 'Grant Tokens'

The co-op receiving the grant tokens is requested to put them into circulation as soon as possible so that, overall, as many tokens are available as needed to match the goods and services on offer. They could do this in various ways, one being simply to distribute them to their members. However there would be encouragement for co-ops, given an increasing demand, to spend some or all their grant tokens on further development of their goods and services, addressing unmet wants and needs, increasing purchases from their supply lines, increasing their productive capacity, their productivity, and, with additional support (see next), innovating new products and services, new internal processes, new business models.

Note on FairCoin

FairCoop has closely related values and aims and its recent launch of FairCoin2 (July 2017) has made an enormously valuable contribution to the cryptocurrency world through its implementation of its Proof of Co-operation block validation process which drastically reduces the energy required to validate blocks by making it a collaborative rather than a competitive process. It can only be hoped that this approach is adopted by all cryptocurrencies in due course, and is essential if cryptocurrency is ever to expand to the point of serving a significant proportion, let alone all, of the world's economic activity without destroying the planet in the massively energy expensive mining process that is currently used by most.

However, perhaps in part because of an unfortunate set up sequence, FairCoin has made some historical decisions that, reading between the lines FairCoop now seems to regret, as they seem likely to prove detrimental, and possibly fatal, to its aim of establishing an independent co-operative economy.
(See the Appendix for more on the drawbacks of these FairCoin decisions.)

It may be that in another iteration of FairCoin these problems can be addressed, or of course I may be wrong about these problems, in which case FairCoin could happily be adopted as the proposed Co-op Exchange Token, but it looks as if it would be a very difficult decision, tantamount to starting again.

The Creation of Co-operative Exchange Tokens

Putting Cryptocurrencies into Circulation
Many cryptocurrencies are now launched with an Initial Coin Offering (ICO) offering their coins for sale and seeking to draw in large amounts of funding both for the further development of the cryptocurrency's wider functionality and often to enrich the founders. FairCoin at least tried to be more generous and launched by giving away 50,000,000 coins, but it is argued (See Appendix) caused themselves problems and limited their ability to support further development.

The Power of Launching a Credible Cryptocurrency
The real value of a cryptocurrency I argue, lies not in how much people are prepared to pay for it at launch or at any time later, but in its uptake and use for the exchange of goods and services in the real world. Like any other form of money, its value is a social construct maintained by people's belief that the coin is and will continue to be usable for buying and selling goods and services. This in turn depends on it being managed correctly – or better, is set up to self-manage correctly to ensure that the tokens in circulation, and the value of available goods and services, are kept in balance.

But above all, the ability to create Co-operative Exchange Tokens, if used wisely, has enormous power both to build the co-operative economy and a viable world.

Balancing Token Supply & Demand
When a good or service is made available, 'offered', on the Co-operative Exchange Platform, there needs to be sufficient tokens in circulation to purchase it. It is therefore proposed that the 'offer act' itself causes a number of tokens to be created and put into circulation. These could initially be based on an estimate of the first month's sales.

The monthly 'grant tokens' are provided to the offering co-op in advance of sales but they additionally receive the tokens generated by the sales when they take place. The grant tokens therefore act not only to ensure that there is sufficient and balanced liquidity but also as a strong incentive to co-ops to make offers on the platform.

Should the offer sales in fact turn out to exceed the projected monthly sales, they receive additional grant tokens over and above those allocated for the next automatically upgraded projection of the next month's sales. Conversely, should sales be below projection, the next month's automatic sales projection would be reduced, and the tokens received would also be reduced by the previous month's excess grant tokens.

After initial projections of sales from offering co-ops, future sales would be automatically calculated, and the derived number of tokens automatically transferred to the offering co-ops, by the Co-operative Exchange Platform.

As the grant tokens are intended to provide the liquidity needed to purchase the offers made, they could have a time limit placed on their validity to discourage them from simply being placed into savings. The co-op receiving the grant tokens would be requested to put them into circulation as soon as possible so that overall as many tokens are available as are needed to match the goods and services on offer. They could circulate the grant tokens in various ways, one being simply to distribute them as a 'bonus' to their members. However there should also be encouragement for co-ops, given an increasing demand, to spend some or all their grant tokens on further development of their goods and services; to address unmet wants and needs as identified on the Exchange Platform; to increase purchases from their supply lines; to invest in increasing their productive capacity, their productivity, and, with additional support (see next), innovating new products and services, new internal processes, or new business models, thereby increasing the co-operative economy.

This of course cannot go on forever, but there is a long way to go before the Co-operative Economy is able to meet everyone's needs, with the innovation funded to do so within the carrying capacity of the Earth.

Paying for Block Validation
An element of all exchanges would have to cover the cost of block validation and network operation.

Using some version of the Blockchain, FairCoin's collaborative proof-of-co-operation, would be far less costly than BitCoin's proof-of-work or Ethereum's proof-of-stake as both are more energy intensive and concentrate control of the network in the hands of a progressively smaller and more highly invested group of miners, which, if it goes too far, could threaten the integrity of the system.

Alternatively, if Holochain becomes established as a viable infrastructure, then co-operatives themselves could provide the required distributed operational exchang infrastructure, perhaps adopting a co-op variant of the Holo mutual credit system to balance the costs across the system. Currently Holochain appears to offer the most appropriate set of features for the system proposed here. It promises far greater scalability, lower running costs, low costs for setting up and running a validation node, Holo token payment made for work done than rather than the competitive winner takes all of most other blockchain validation processes. It also appears that it supports setting up highly distributed cloud services, so that the Exchange Platform/s for example could be run by the participant cooperatives themselves each setting up an inexpensive Holochain node.

The development of Holochain as a potential infrastructure on which to build a Co-op Exchange Token, or alternatively an Inter Co-op Mutual Credit System, the Co-operative Exchange Platform, the Horizon Scanning Platform and the suggested DACO will be kept under review with respect to these features and critically also, to its reliability and overall security.

2. Co-operative Exchange Platform

Aligns with National Co-operative Development Strategy:

- by 2020 “Pilot service in place to support co-op-to-co-op trading”

But adds for the future: “co-op-to-co-op-member trading”

- *with the further aim of everyone eventually becoming a co-op member!*

This is a platform for buying and selling co-operatively produced goods and services between co-ops and co-op members, using the Co-operative Exchange Token. As such it also has a key role to play in balancing the availability of offers on the platform with the creation and circulation of tokens to match the offers.

Providers would be able to place their offers on the platform (receiving tokens as an incentive).

Purchasers would be able to search for and either find what they are looking for or post it under a Wanted section, stating and classifying what they are looking for, how much/many and at what price.

The Wanted section would thus play an important role in flagging unmet needs and indicating where further co-operative offers can be made to meet the demand, and where these cannot be met by existing co-ops, then indicating scope for new co-ops or existing co-ops to develop, flagging this to the Co-operative Economy Foundation (see next).

It also has an important role to play in the release of Co-X-op tokens, working first with a co-ops initial estimate for sales of offered goods and services to provide them with ‘grant tokens’ (see last section) and thence forward calculate further grant tokens based on previous sales.

Another important function would be to identify locality of wants and offers and whether for instance there would be transport costs, potentially placing a carbon tax on the transport of goods which would go to the Foundation to fund carbon reduction and sequestration innovation.

Ideally it would have global, national, regional and local information to assess the balance of token flows and perhaps to support the development of poorer areas.

A Co-op of Co-ops

Because it plays a critical role on the Co-operative Economy, the Co-op Exchange Platform would be operated as a co-op of participating co-operatives. When a co-operative signs up to make offers, it automatically becomes a member with voting rights on its operations and regulation. They would then also automatically become members of the Co-operative Economy Foundation (see next) with the same rights.

Reputation Records

As with many online exchange services, reputation of both individuals and co-operatives can play an important role in building trust. In this context, reputation could be expanded beyond simply reputation as traders, to include reputation as co-operators, both for individuals working in co-operatives and co-operatives themselves for their upholding of co-operative values and contributions to the common good.

On the negative side, another function of the reputation system would be to identify those who attempt to cheat the system or commit fraud. Then, if identified, such people could find themselves rejected as members of any co-operative and hence no longer able to operate in the Co-operative Economy. Hopefully this would crate a strong disincentive.

Taxation

To the extent that a Co-operative Economy, based on a co-operative exchange token, grew to any significant proportion of the overall economy, governments would want to start levying taxes on the system. That would be acceptable, given a certain condition.

First, to initiate the discussion, the government in question has to de facto recognise the exchange token. Given then that it is built into the Co-operative Exchange Tokens that can only be used to buy co-operatively produced goods and services and can only be paid to cooperatives or co-operative members, then the first condition would be that the national and/or local government in question would have to become a co-operative. Perhaps not so difficult: it is, in principle, under democratic control; the electorate form its members and they pay for its services. It could therefore be considered as and be registered as a consumer co-operative – and a good thing if they signed up to the co-operative principles!

As there would be no other form of money, the government would have to accept Co-operative Exchange Tokens as tax payment. That in turn would mean that they could only spend these collected taxes back in the Co-operative Economy, at least not draining it and potentially helping it to grow.

Nonymous Transactions

This may be controversial, given the touting of anonymity on cryptocurrency systems, but it is proposed that all transactions can be attributed to named co-ops and co-op members. This would have a number of advantages:

- If a wallet is lost or damaged, all of a participant's transactions can be reconstructed from the blockchain record.
- Potentially a separate wallet or storage service might not be necessary, only requiring software able to read the blockchain to provide a participant's current standing and full transaction history.
- Any fraud committed would be instantly traceable to the perpetrator, this acting as a further significant deterrent

I'll leave it as a question: why should anyone, conducting fair co-operative exchanges, need to keep them secret, if they are above board?

Relationship between the Co-operative Exchange Platform and Token Release

To function as an enduring means of exchange, the value of token must be kept as stable as possible, with minimal and ideally no fluctuation. To achieve this, apart from ensuring that the token is not tradable as a commodity, a continuous balance has to be maintained between the coins in circulation and the goods and services that can be purchased using it.

An aim of the Co-operative Exchange Token is to create a fully functioning co-operative economy. This will initially run in parallel with, but independently of, the current capitalist economy. However the further aim is ultimately for the co-operative economy to replace the capitalist economy through a bloodless revolution driven by individual and organisational choice. But for this to happen the currency will have to grow hugely, and this then needs to be kept in balance with the co-operative production of goods and services available in the co-operative economy that would have to grow commensurately. Looking at it the other way, the number of tokens made available must be kept commensurate with the goods and services on offer using the tokens. Typically at any time, a percentage of the available tokens will be held in the form of temporary or long-term savings and therefore the number of exchange tokens released can be greater than goods and services available for purchase by some calculated factor.

Here then, the Co-operative Exchange Platform, or possibly multiple, but connected, Co-operative Exchange Platforms, has or have a critical role to play in providing the data needed to calculate the token release rate.

But for the most part, the creation of new tokens should primarily aim at increasing productive co-op capacity as their route to circulation.

3. Co-operative Economy Foundation

A key function of the Co-operative Economy Foundation is, as its name suggests, to build the Co-operative Economy, using the Co-operative Exchange Tokens granted to it in the process of ensuring a balanced supply.

As mentioned in the last section, when a co-operative signs up to the Co-operative Exchange Platform, they automatically become a member of the Co-operative Economy Foundation, with a democratic say in its use of tokens to drive the development of the Co-operative Economy as a whole.

Only a percentage of the newly created tokens, perhaps 50% but adjustable over time, goes directly to the co-operative making the offer, the remainder going to the Co-operative Economy Foundation. The Foundation would have several aims:
1. To create new co-operators - individual learning and development
2. To support the development of new co-operatives, perhaps addressing unmet needs identified on the Co-operative Exchange Platform
3. To support innovation both in existing co-ops as well as newly formed co-ops
4. To promote of the Co-operative Economy, raising general awareness of the co-operative sector, its principles, its benefits individually and socially, and the way it works
5. To co-develop and enhance the supporting co-operative software systems
6. To provide non-sales activities that serve the common good, from environmental protection, enhanced social wellbeing, certain forms of shared infrastructure, and so on.

The proposed Co-operative Economy Foundation will therefore be charged with using its tokens for:
- Public awareness raising of co-operative values, principles and operations.
- Training and support of people entering the co-op sector - an obvious point of investment. (People could be paid to join co-operative induction programmes, e.g. 1/3rd working for a co-op, 1/3rd training in co-op principles and practices, 1/3rd developing with others a potential co-op startup, using lean start-up principles, thus, where successful, increasing available goods and services.)

- Induction of new members into co-operatives, ideally in alliance with the Co-op College's Apprenticeship programme, together with Hive materials and support.
- Significant investment in new co-op start-ups and in enabling existing co-ops to meet unmet wants and needs as identified on the Co-operative Exchange Platform.
- Supporting innovation for new co-ops and development of existing co-ops
- Investing in increasing existing co-ops' available goods and services to meet cases of increased demand.
- Supporting and maintaining the Co-X-op token and blockchain software
- Developing the Co-operative Exchange Platform/s support for offers and wants (the latter indicating as yet unmet needs and hence scope for further co-operative development).
- Development of the software needed to support the efficiency and running of co-ops themselves - Distributed Autonomous Co-operative Organisations, DACOs - which can be adopted by new and old co-ops alike. Such software would need to be continuously developed, tested and evolved in close collaboration with co-ops using or planning to use the DACO software.
- Development of the Horizon Scanning and Lookout Platform
- Ensuring security across all software development and platforms.
- Non-commercial projects that promote the Common Good (globally and locally defined) and enhance sustainability for future generations.

New Co-operators
Expanding the Co-operative Economy ultimately depends on expanding the number of people able to work effectively within it. A major task from here on will therefore be to support the induction and apprenticeship of people into the co-operative ways of working and living. In the UK, the Co-operative College's Apprenticeship programme and Co-ops UK's Hive platform have both made steps in this direction, which should be supported and significantly extended through tokens.

Co-op Apprentices could be paid by the Foundation to join co-operative induction programmes, e.g. 1/3rd working for a co-op (which would also be eligible for government apprenticeship funding), 1/3rd training in co-op principles and practices, e.g. with the Co-op College programmes, 1/3rd, when ready, developing with others a potential co-op startup. The Foundation could fund some of the costs of the initial training.

New Co-operative Startups
This would be supported by the proposed GetGo startup simulation (see later), which would enable ideas for new co-ops to be tested and explored before significant investment is made in their launch. Those that appear viable would continue to be supported by the Foundation until they can pay their way. If they fail, then that would be treated as an occasion for learning, with a thorough understanding of the reasons for the failure and published as a lesson in pitfalls for them and others to avoid in future. There would be no requirement to repay "the loan", the tokens being put into circulation to balance the economy.

Open Co-operative Innovation - the Co-operative Commons
Learning from open source software and the maker movement, it is proposed that all innovation, but in particular that funded by the Co-operative Development Foundation, be

available as Co-operative Commons. The Foundation would undertake the task of patenting or taking out Creative Commons licences. These would be available free to any co-operative, but licence fees would be required for use by for-profit private companies.

The aims would be:

1. To encourage open and collaborative co-innovation across co-ops
2. To enable co-ops as potential customers to co-innovate with co-op producers
3. To encourage innovations leading tio increased sustainability, e.g. through renewable energy and energy storage, energy efficiency, low wastage, dealing for product longevity, resume and recycling, accelerating the introduction of the circular economy, products as shared services,etc.
4. To ensure the widespread and rapid dissemination and take up of successful ideas within the co-operative sector
5. To develop a Co-operative Creative Commons, covering all forms of IPR, making innovations freely available to all co-operatives (perhaps to non-profits also), but require licence fees from commercial companies.
6. To encourage co-operatives to build on new innovations and then to reshare their enhancements, thus greatly speeding up the overall innovation process (when compared to the current 20 year lock down on patents, effectively halting further innovative development) thus moving much more rapidly towards a sustainable economy.
7. To demonstrate that open IPR, placed in common ownership, promotes greater, more rapid and more effective innovation than the current system of closed, privately owned IPR. (Witness the extraordinarily rapid rate of web coding innovation when anyone could look at the code behind a web page, and adopt, adapt and further evolve it for their own pages.)

Supporting Development of Secure Co-operative Exchange Systems

Thus, based on an appropriate Blockchain mechanism, the Hive platform could provide a starting point, with co-ops able to learn and subsequently adapt the DACO software and create their own networked and interoperable platforms, providing distributed security and sharing of the computational load. Then would then be able to integrate it with the process of making their products and services available through the Co-operative Exchange Platform.

Receipt of Co-operative Exchange Tokens can only result from co-operative work, where the notion of ‘work’ can be extended to those undertaking co-operative learning and development programmes. The latter would be the route into the co-operative economy for most people, coupled with a part time ‘co-operative apprenticeship’ in an existing co-op, paid through the Co-operative Development and Innovation Foundation through joining its Learning and Development Co-operative.

4. Decentralised Autonomous Co-operative Organisations (DACO)

This is the most speculative part of the proposal and would likely be developed last.

The idea for a Decentralised Autonomous Co-operative Organisation - a DACO – is taken from the (failed) attempt to launch a Decentralised Autonomous Organisation - a DAO – that was built on the Ethereum blockchain, taking advantage of its built-in programming language, Solidity. This feature considerably extends the possibilities of what can be done with a blockchain, allowing contracts and agreements of any sort to be securely executed - providing the software built using it is itself secure.

The original DAO aimed to provide a new decentralised business model for organising both commercial and non-profit enterprises. It had no conventional management structure or board of directors. The code of the DAO is open-source.

The DACO would consist of multiple smaller applications (DApps or Distributed Applications in the Ethereum world) needed to support the running of a co-operative.

Development of the DACO software would be closely linked to the Simulation game which provide a valuable means of developing, testing and getting right the functionalities and human interfaces of the various DACO modules prior to full implementation.

Once the simulation had taken co-op startups through the options for the type of co-op structure and an appropriate model selected, these could be used as parameters to configure first the simulated co-op support software, and when complete, the same parameters would be used to configure the fully operational DACO support software. *This would be similar to the 'Click Co-op' idea, whereby at a click you could set up the software needed to run a co-op, but 'multi-click' configurable to accommodate the many types of co-op structure and functional configurations.*

Before this stage is reached, the simulation game can be used to act as a test environment for the development of a fully working modular, operational support platform providing blockchain based networked operational services to new co-ops, and to existing co-ops, as desired. The service modules, such as accounting, payroll, contract, sales and purchase, etc., can be seen as similar to those provided e.g. by SalesForce, but openly developed by, with and for co-operatives. Based on the DAO ideas, the aim would be to provide the software needed for a Decentralised Autonomous Co-operative Organisation - a DACO.

The underlying blockchain mechanism could also be used for records of incorporation, membership, member value creation, goods and services produced and available, contracts, etc. All of these would be built over Blockchain or a similar distributed trust technology. For these other functions, the adopted or developed blockchain would need to provide Ethereum-like programmable state machine capabilities.

But a DACO Security Warning...
Learning from the failure of the original DAO project, which was brought down by being hacked, losing a considerable amount of Ether tokens in the process, it is clear that security is a major issue. It appears that it was not with the underlying Ethereum blockchain that the security weaknesses lay , but with the code written on top of it to implement the DAO. Hence considerable and thorough security testing needs to be carried out on all DACO software modules before being launched for general use by co-operatives. It also appears that security weaknesses in the DAO software had already been spotted before the launch, but not acted on. Pay heed!

5. Hive Co-op *GetGo*
– a startup simulation for launching and running co-ops

– and for co-developing the other main software systems

Aim

For the Co-operative Economy to scale up to become a significant percentage, and the ultimate goal is for it to become the whole, of the global economic system, a continuing and major undertaking will be providing support for widespread learning of co-op principles and practices, together with the knowledge and skills needed to run co-ops.

There would also have to be a major focus on the role and successful implementation of innovation given the urgent necessity to put our physical economy on a permanently sustainable footing, which our current economy is failing to get anywhere near.

The aim is to help people both learn how to set up and run a digital co-op and then seamlessly transition to doing it for real. The game is a practice simulation not a competitive one.

A further aim is to co-develop and test, with the wider co-operative movement, the functionality and human interfaces of the proposed Co-operative Exchange Platform, the Co-operative Exchange Token, the Decentralised Autonomous Co-operative Organisation and the Horizon Scanning Lookout Platform, all of which can be included as simulations as a part of the larger simulation.

When these are fully implemented, people should be able to seamlessly transition from the simulation to full operation.

The following provides suggestions for facilitating new co-op start-ups. There are two parts to it: the first part covers the need to think through the structure and function of the co-op, while the second part seeks to develop and test the co-op's proposed business model. The second part draws heavily on Lean Startup thinking which evolved in the context of innovative digital and web-based startups. It has since grown to cover any innovative start-up, as well as the development and launch of innovations within existing companies.

However it provides a framework for any start-up, whether digital or not, whether innovative or not: make sure you have a market for your offer, that you understand the problems your future customer/clients face and how your offer is going to help address them, before you put lots of time and money into developing it and setting up your company.

***GetGo* Proposal**

The proposal is to create a simulation game for new co-operators to practice setting up and running a (digital) co-op. It is suggested that this could be integrated into the Co-op UK's Hive platform to work along with and enhance its existing support for co-op startups.

It is proposed that it would come to replicate the proposed real-world operational software for running a co-op, the Decentralised Autonomous Co-operative Organisation - DACO. The simulation would also introduce the Co-operative Exchange Platform and the Co-operative Exchange Token. Technically, to be fully operational these would need to run over a blockchain network, based on or derived from Ethereum, but using FairCoin's energy efficient Proof of Co-operation to validate blocks. But for the simulation, only the front end user interfaces and simulation software would be needed, and these would provide a way of co-developing the functionality and human interface of the frontend software

Digital Co-op
A co-op where internal processes and external exchanges are largely or completely carried out digitally.

How - Thinking through your co-op, with Hive advice at this stage

There are two parts to this:

The first part asks a series of questions as to the nature of the co-op, optional co-op structures, operations etc.

The second part helps startup co-ops develop and test their initial business model, initially carried out virtually in a Lean Startup derived Think-Make-Test learning loop.

What Kind of Co-op?
The following questions are the kind of questions that any co-op has to decide on when setting up and which get addressed on the Hive.

- Models: What type of co-op? Producer? Consumer? Hybrid?
- What co-op structure? (Review types and make first guess - decide later)
- What decision making process?
- How many of you to start with?
- How much pay?
- What roles?
- etc.

What Product and/or Service are to be Offered? Is it Viable?

The following questions derive from a combination of Lean Startup thinking and Strategyser's Value Proposition Canvas and Business Model Canvas.

The aim of this part is to arrive at initial best guesses for the co-op's business model, ready for testing in the next stage.

- Online, offline, hybrid?
- Product or service? (Think about transforming product into service?)
- Co-production with?
- Customers: who needs/wants your service/product? Why? How many?
- How will you help meet their needs/wants? Address their 'problem to be solved'?
- How much will it cost them? Can they afford it?
- How will you reach people?
- How will you continue communicating with them?
- What will you have to do to provide the service(/product)?

- How much will your people need to be paid? How much pay will be needed - before income starts (initial burn)? How can this be reduced to a minimum, starting with a minimum viable service?
- What resources will you need - physical/money? Bootstrap or initial loan?
- Suppliers? Collaborators?
- What changes in the larger world would further/damage your activity? (demand, your suppliers, competitors, technology, the local and larger economies, political/legal, environmental)
- How will you check on them? What would you do if any of these happened?
- How likely/unlikely do you judge them to be?
- How will you review these over time and adapt?

Configuring the simulated Decentralised Autonomous Co-operative Organisation or DACO
Decisions made about the people involved, the structure, function and operations would be used to configure the simulated Co-op support software. While initially this would only be available within the simulation, it would however be used later to help develop and configure the fully operational DACO software system *(see later).* When in place and found workable, the simulated configurations could then be used to configure the live DACO software to meet the specific requirements of the new co-op.

Co-op Business Development Model Canvas
- The initial answers are used to draw up a business plan - based on the Business Model Canvas
  (The Business Canvas needs adapting for co-ops - a Co-op Development Model Canvas?)
- At this stage all the initial canvas entries are best guesses

Testing your best guesses
- These are then treated as an integrated set of hypotheses, each to be tested.
  - Work out how you will test each of these assumptions/guesses.
  - A parallel 'Test Canvas' is drawn up with a test for each hypothesis in each corresponding box
  - A pass/fail point is set for each test
- Set out a 'test programme', starting with the most important and riskiest.

Play the 'Test Game'
This game tests your assumptions by throwing simulated but realistic data.
If an assumption doesn't test positive, change it ('pivot') and retest.
End up with a model that works.
The outcome of this stage is a Minimum Viable Service (MVS). Users are encouraged to recast 'products' as as 'services'.
The purpose of this exercise is to prepare for and provide practice for carrying out co-op business model testing to arrive at an MVS in the real world.

Ready to start the Living Co-op game
Now go into full gameplay mode running the virtual co-op.
- Actual data (expected employees, pay, resources, etc.) and simulated data (customers, processes, etc.)

- Activities, marketing, costs, sales, pay, running weekly, monthly and year budget, using simulated online Hive platform services.
  (These services would initially be prototypes of, but eventually become, the fully working Hive services that are being developed in parallel. Simulating the services first allows them to be tested and enhanced by the wider community of co-operatives before production coding starts.)
- Use simulated co-op token (Co-X-op?) for exchanges with members and other co-ops.
- Use a simulated 'Co-op Exchange Platform' to seek trades with other co-ops.
  (Using the simulated DACO tools, which have the same human interfaces as the live tools, enables co-op startups to seamlessly transfer to the live tools when ready.)

After simulated testing of the proposed offer, the next step is to test it in the real world, and start setting up the co-op. On establishing a business plan that works, it is then time set up the co-op in full operation along the lines already practiced, hopefully with the start up risks now considerably reduced.

***GetGo* for existing Co-ops**
Existing co-ops could also use the simulation to test their innovations and new ventures prior to launch. Importantly in using the simulation to test their innovations, they would be invited to provide suggestions and feedback to help co-develop the functionality and human interface designs for the fully functioning DACO software that would follow after these aspects of the simulation software reach acceptance by participating co-ops.

6. Shared Horizon Scanning for Co-op Viability

Just as bees bring intelligence back to the hive, the proposed Collaborative Horizon Scanning and Lookout Platform is designed to enable co-ops to collectively gather and share general intelligence about their operating environment, relevant to the co-operative sector as a whole, and more specialized intelligence relevant to particular co-op sectors.

The purpose is to help ensure the continuing viability of individual co-ops and co-op sectors and the co-op economy as a whole by collaboratively identifying and developing responses to relevant changes taking place in the world that have a bearing (opportunity/threat) on their activities, thereby enabling them to react in a timely manner, and thus helping to ensure their continuing survival and development/evolution.

Having this feedback loop from the operating environment, particularly when it is volatile, is an essential component of an adaptive learning organisation.

This could use the **Signal --> Sign --> Significance** pattern. E.g.

Signal	Sign	Significance
Link to the relevant item that is signaling a change in our operating environment	*What Wider Change is that Signal a Sign of?*	*What's the Significance of this Sign for US / What we do? Who we do it for? How do we respond?*

Data/Report	New technology developments	How do we learn about & incorporate these developments in our projects?
Social Media	New Business model	Do we need to change our business model? If so how?
News Item	Social/economic change	How does this impact on our customers and markets?
New Legislation	New government constraints on ICOs	Do we need to change our ICO-dependent plans?
...	...	...

Then in associated/linked discussion fora, co-ops can collaboratively consider:
- How do we take advantage of the opportunity/circumvent the threat or turn it to our advantage?
- What kind of innovations should we explore?

The Think-Make-Learn assumption testing feedback loop of Lean Startups now becomes embedded in a meta-loop to become:
- Monitor Relevant Change
- Re-check which Assumptions No Longer Hold
- Innovate Response
- Make It Effective (Think-Make-Learn)

... keeping established co-ops agile!

Or, in a turbulent world, where previously working assumptions get overturned,
… *learning is continuous and startup never ends*.

Appendix 1: Rationale for Giving Away Tokens

It may seem odd to give away tokens to a seller if they will also they will receive tokens in the normal way when they come to sell their goods and services.

So let's begin with a couple of simplifying assumptions. There are at first only two co-operatives making their offers on the Co-operative Exchange Platform. It so happens that they both want what the other has to offer and at the same cost. They both want to exchange. But if neither has any coins, then they cannot. To get the exchange process started, they both need to have tokens. It's therefore proposed that as soon as they place their offer, both should receive tokens equivalent to the (estimated) value of their first month's offer. Now they can both exchange. The tokens available match the goods and services on offer. The token grants simply enabled them to make their exchange of goods/services.

Both now having tokens, assuming both want to repeat the order each month, they each now have the tokens needed and can happily exchange from then on.

However should they both want to increase their order in a latter month, they would both again be short of the tokens needed. More goods and services on offer than there are tokens to buy them.

It is therefore further proposed that whenever a co-operative increases (the value of) its goods and services on offer, it receives a grant of tokens equivalent to that increase. Overall, offers and tokens are kept in balance… and it acts as an incentive for co-ops to make offers on the Platform.

Appendix 2:

Early FairCoin decisions that the FairCoop community still or will struggle with

1. It has fallen into the trap of making FairCoin a tradable commodity currency, which in the cryptocurrency world means high volatility. They recognise the problem of value fluctuation to a currency whose main purpose is the exchange of goods and services and are trying hard to peg the currency to a fixed rate against the euro, currently 0.8 euro (now Nov '17, 0.9 euro), but it is hard to see a) how this can be maintained if the FairCoin currency is tradable and hence subject to market forces and currency speculation, and b) pegging its value to that of another currency means that it is also subject to the changing exchange values of the euro itself. What, as an extreme example, would happen to the value of FairCoin if the euro itself were to collapse as a currency? As they have now instituted a sliding peg, they would have to slide its value upwards, but a sliding peg is not stable.
2. They initiated FairCoin through a grand gesture of giving away 50,000,000 coins to the first people who asked for them. (This was apparently before the FairCoop was founded, and reading between the lines, is now regretted.) Apart from this being somewhat arbitrary, favouring those who happened to know about and take up the offer, there is no method of balancing the FairCoins put into circulation with the availability of goods and services that can be bought using them. There appears at

present (Nov 2017) to be very little by way of offers available for purchase, which under market conditions will cause price inflation and a drop in the FairCoin value.

3. They attempted earlier to stabilise the value by pegging it to the Euro at one FairCoin to 0.20 Euro. However the Crypto market is bubbling away nicely and in recent months FairCoin has risen something approaching 5 times in value. “Good” they say, but they risk it crashing or oscillating wildly, and making it extremely difficult to use it for its main purpose of facilitating trade and undermining their attempt to stabilise its value as they have in parallel changed the exchange rate to 1 FairCoin to 0.90 euros. It would seem that they have lost control of their currency leaving it at the mercy market forces and speculators.
4. The biggest risk is that should the Fair Market to be successful to the extent of challenging the existing economy, it would be open to currency speculation by those with enough money to repeatedly “pump and dump” FairCoins, destabilising and potentially breaking their economy.
5. Being tied into existing financial markets, it is not clear what would happen to FairCoin in the event of a major financial collapse, but again it poses a significant risk that their economy would be drawn down with it.
6. Unless they keep their set FairCoin exchange value very close to its market value (they review monthly, unless they have been forced to change recently) they are open to currency speculation: If the market value of FairCoin on the currency exchanges rises above their set peg level, people will buy FairCoins from FairCoop at the pegged level and then instantly sell them for a profit on the currency exchanges. Conversely if the market value falls below their peg level, people will buy Faircoins on the currency exchanges and, as FairCoop offer to buy Faircoins for Euros at their set rate, sell them to FairCoop at a profit. Either way, FairCoop loses out.
7. They also lost the potential to provide the FairCoin Foundation with an initial grant of coins, now having to rely on cash donations to buy FairCoins for the Foundation.
8. By giving away such a large amount of coins with no control over spending, it has lost the potential, and the economic requirement, to ensure that the coins are used to invest in the production of goods and services to be made available for purchase using FairCoin, which would have counterbalanced the inflationary consequences of releasing a large number of FairCoins at launch. Used wisely, the creation of a co-operative exchange token has enormous potential for developing a flourishing co-operative economy, and, as it stands, FairCoin appears to have missed this opportunity.
9. Another potential problem is that they allow any business, whether or not a co-operative, to trade on the Fair Market platform. It is thus open to the risk that a significant minority or even a majority of companies operating on the Fair Market platform are existing commercial, for profit companies, operating on capitalist principles and practises, leaving Fair Market open to all the evils that capitalist markets give rise to: badly paid workers treated as expendable ‘resources’, unfair competition, and the steady market evolution towards monopolies. It leaves the door open for the Fair Market to develop into a replica of the existing capitalist competitive market economy, undermining its fundamental aim of creating an alternative and fair co-operative market and commons economy.