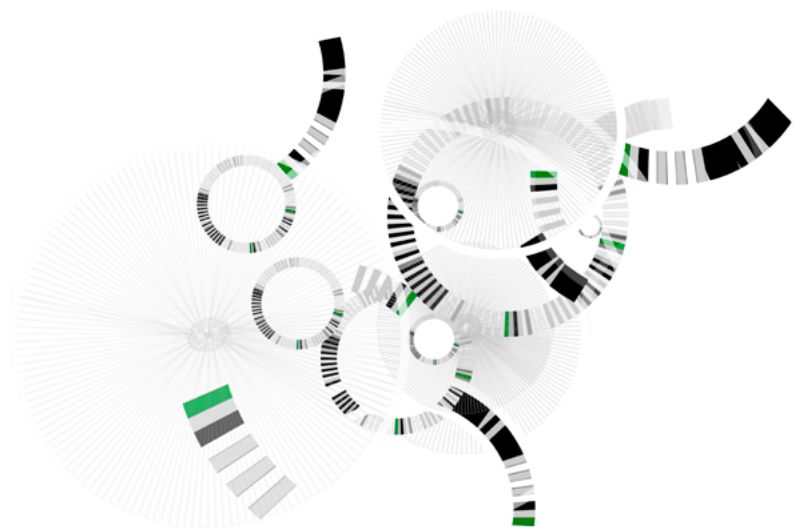


THE CREDIT COMMONS: A MONEY FOR THE SOLIDARITY ECONOMY



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AUTHORS

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ABSTRACT

This paper describes Credit Commons as a proposed solution to a set of problems with the money system. Other papers are planned to cover different aspects of the idea, including technical implementation. Collaboration is invited.

ABOUT THE AUTHORS

Matthew Slater has been building free open source software for Community Exchange and living as a nomad since 2008. In 2009 he co-founded a Swiss nonprofit, Community Forge, which hosts that software for 150 communities. In 2013 he co-created the trading floor game with Sybille Saint Girons. In 2014 he built the timebanking site for New South Wales government in Australia. In 2015 he co-authored the Money and Society MOOC with professor Jem Bendell. He blogs at http://matslats.net/complementary_currencies and is on Twitter @matslats .

Tim Jenkin was an activist for the banned African National Congress (ANC) in the 1970s. He was arrested and sentenced to 12 years in prison for his anti-apartheid activities. He escaped from the Pretoria maximum security prison in 1979 and went into exile in the UK. During the 1980s he built and ran a secret communications network for the ANC. From 2002 he has been building Community Exchange Systems, a network of several hundred community currencies. For more information see his wikipedia page https://en.wikipedia.org/wiki/Tim_Jenkin and follow him on Twitter @ces10 .

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INTRODUCTION

Eight years after a near financial meltdown, and teetering as we appear to be on the brink of a colossal deflationary recession, there are comparatively few voices calling for the restoration of a healthier view of money. Some of the efforts we applaud and support are listed in Appendix A.

We take our cue from Thomas Greco¹⁾ who was the first, to our knowledge, to coin the expression ‘credit commons.’ In this passage he laments the inefficiency of the business barter sector and explains what it needs to progress.

As they are operated today, commercial trade exchanges are self-limiting and typically impose significant burdens upon their members. These include onerous fees for participation, exclusive memberships, limited scale and range of available goods and services within each exchange, the use of proprietary software, and insufficient standardization of operations which limits the ability of members of one trade exchange to trade with members of other exchanges.

*Virtually all commercial trade exchanges are small, local, and operated as for-profit businesses. Small scale, local control, and independent enterprise are all desirable characteristics... **What the world needs now is a means of payment that is locally controlled but globally useful. That means giving members of a local trade exchange the ability to trade with members of other exchanges easily and inexpensively, with little or no risk.***²⁾

1) Best known for his book, *The End of Money and the Future of Civilization*

2) Tom Greco Jr, *The Wealth of the Commons: A world beyond Market & State*, emphasis added

This credit commons proposal is a general solution to the need he expressed not only for business barter, but for the whole complementary currency movement. In this paper, we take a deeper look at the problem and develop the idea hinted at above.

MONEY AND CREDIT

For most of history, money has been understood as a social technology, a tool for organising society based on the contributions and needs of its members. Whoever governs the system mediates between creditors and debtors either by adjusting the value of the unit of account or the quantity of money. Ideally this role is fulfilled by a sovereign entity such as a Queen, beholden to neither and concerned with social stability.

However, in the modern world the so-called sovereigns owe money and creditors have all the political power. This is evident as the 'troika' now sets economic policy for indebted southern European nations, extracting interest without mercy, and causing long term social and economic damage.

Accompanying this shift in power, an unusual view of money has come to prevail in recent centuries³⁾. Money is now regarded not as a tool for the more efficient functioning of society, but as an absolute commodity whose value is not determined by governments but by 'free' markets like any other commodity. It is thus a tool in the service of the wealthiest players.

“The key feature of capitalist money is to be a commodity whose price - that is, interest - is determined on the money and financial markets. Therefore what distinguishes capitalism is, first of all, the fact of regarding money as merchandise”⁴⁾

This is a strange form of merchandise which is created by the stroke of a legal pen, and when it meets its counterpart on a balance sheet it vanishes, leaving a hole.

MONEY AS-WE-KNOW-IT

Most money does not consist of notes and coins, but of ledger entries in banks. There is a fundamental difference between these because we do not own our bank deposits, and indeed nothing is deposited. Money in the bank is really only the bank's promise of money.

Since the late middle ages, banking networks have wielded power over nation states through their ability to promise and settle much larger volumes of money than states could, albeit virtual money which only exists on a balance sheet. Bank money is a form of credit that exists only on a ledger, flowing between trusted parties. The vast majority of modern payments happen within those banking networks; when banks just cancel out promises to pay virtual money. Promises can be issued in any quantity which the network members trust each other to honour. At one point that network had its own international unit of account and process for adjusting its value, rendering the coin of the realm mostly irrelevant to European merchants⁵⁾.

Paradoxically the only industry legally allowed to issue credit that governments will uphold is almost the least trusted of all industries⁶⁾. If we want our money to have the universality and purchasing that goes with government (and military) authority, then there is no alternative to our collectively becoming debtors to those untrustworthy organisations.

3) See Money, the Unauthorised Biography, Felix Martin Chapter 8: The economic consequences of Mr Locke

4) Massimo Amato & Luca Fantacci, The End of Finance pp xiii

5) See Felix Martin, Money, the Unauthorised Biography, Chapter Financial Sovereignty and Monetary Insurrection

6) http://www.huffingtonpost.com/2012/03/16/financial-industry-trust_n_1353564.html

DIFFERENT KINDS OF MONEY?

Another paradox of our money system is that government debt used to finance business and house people is simultaneously the medium of exchange we use to support our daily needs. This means that as debts are repaid, the amount of money in the economy available to facilitate exchange actually decreases. As a result business slows and the economy falls into recession. For most of history, however, this has not been the case because the functions of money have been more separate.

Compare the momentary debt between eating a meal in a restaurant and paying the bill, to the debt of a country borrowing gold to pay for an army and weapons. There is a continuum going from low risk, short duration, small quantity, to high risk, long duration, large quantity. Although different instruments are appropriate, all modern money is optimised for the latter end of the spectrum.

It is easy to create an alternative currency, to issue and accept credit on the small end of that spectrum so as to work around

- deflationary shortages of legal tender,
- banks assessments of our enterprises as risky or unprofitable,
- ethical concerns about doing business with criminal elites,
- and the need to pay interest on our exchange media.

There are many instances of this happening, but only a few reaching a scale with significant economic impact. As experts in the field we believe there is a number of reasons for this.

- Issuers of legal tender, with lawmakers on their side, naturally seek to marginalise alternatives, which could reduce profits or monopoly power.
- Credit which is only honoured in small groups is hard to spend in a globalised economy.
- Existing collaborative credit groups are not growing because the skills of cooperation and feelings of solidarity are thinly spread, and in many cases the groups don't see their own potential as part of a wider network.

COLLABORATIVE CREDIT AND MONEY AS A COMMONS

The commons is an ancient idea that certain things should not be owned, but be available for anyone to use, such as air, the oceans, or a field on which villagers can graze their cows⁷⁾.

Some people believe that commons are incompatible with human nature or not scalable but new scholarship is reviving, researching and experimenting with new forms of the concept⁸⁾. Elinor Ostrom won the Nobel Memorial Prize in Economic Sciences⁹⁾ for studying how commons work in practice¹⁰⁾.

While there is some talk of a commons money system¹¹⁾, we have never seen a coherent description of what that could mean. The way in which governments cover the losses of banks would be a fine example if profits were similarly shared.

We propose that if banks can honour each other's promises, so can any mutually trusting groups. This is the operating principle behind business barter systems, the Swiss Wir bank, LETS, The Sucre clearing systems in Latin America, and the European Payments Union, which some argue was more responsible for post WWII recovery than the Marshall Plan¹²⁾.

The system simply keeps accounts of what is given and received and hence what is 'owed' or can be claimed from the community. The sum of all those records is, by definition, zero. New entrants to the system start with zero, and departing members must clear their credits or debts before closing their accounts - at zero. The purpose of a properly governed system is to ensure that all members give as much as they receive and receive as much as they give.

This mechanism is called mutual credit, and fits perfectly with the Peer 2 Peer / Commons discourse. Allowing for some local customisation, tweaks and variations, we propose all such systems be called collaborative credit networks.

We think that a money system could be considered a commons when the people who give value to the money, which is to say, those who create the valuable things that money can buy, and bear the risk of nonpayment of debt, participate in its governance and risk management.

The Credit Commons is an accounting framework which:

7) Wikipedia: The commons is the cultural and natural resources accessible to all members of a society, including natural materials such as air, water, and a habitable earth. These resources are held in common, not owned privately.

8) See Democratic Money and Capital for the Commons, <http://bollier.org/sites/default/files/misc-file-upload/files/Democratic%20Money%20and%20Capital%20for%20the%20Commons%20Report.pdf> summary at <http://commonsstrategies.org/democratic-money-and-capital-for-the-commons>

9) N.B. Calling economics a science echos the mis-characterisation of money as a commodity and as part of the natural world which is governed by natural laws, rather than the social sphere, which is governed by beliefs, stories, myths and conventions

10) See Governing the Commons by Elinor Ostrom

11) For example Rachel O'Dwyer, Other Values: Considering Digital Currency as a Commons (2014)

12) Amato & Fantacci, The End of Finance, p120

- is simple to implement
- builds on existing practices, and serves existing projects
- takes the best from the recent wave of technological innovation, such as blockchains
- is scalable, fractally
- models real world trust relationships as a basis for new credit issuance.

BENEFITS AND LIMITS OF COLLABORATIVE CREDIT

Issuing credit within a trusted group confers a comparative advantage over large national economies; trusted credit can be freely issued to enterprise valued by the community, as the credit risk is managed by the community, instead of theoretically being assumed by the bank, for which it takes the interest when everything goes well, and loads the taxpayer with the risk when things don't work out.

It can be issued to finance projects which the group values, rather than projects typically valued by banks. Furthermore, anecdotal data suggests that solidarity and cooperation increases in communities where trust rather than suspicion drives exchanges.

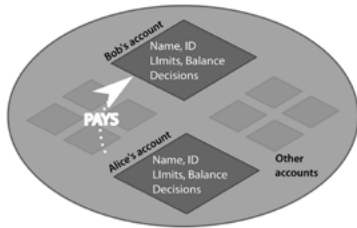
Because the credit can be made available as needed, it is not scarce, does not yield interest, and cannot be manipulated by the wealthiest players in the market. These advantages however come with some limitations, which severely impair their potential to scale.

Firstly, credit issued between trusted parties can only be circulated between those trusted parties so it cannot replace money as a universal medium of exchange. It becomes more useful as the size of the group grows; however, as more people join, the average level of trust between members naturally falls, and the extent of credit that can be issued to each falls with it.

Managing trust is a delicate matter. To prevent members giving or receiving too much, accounts are usually capped in both directions, positive and negative. These limits must be decided through a process that respects those providing credit - potentially all members.

INTERTRADING MECHANISM

One way around these limitations is to retain the localised small groups of trust, but enable the groups to issue credit to one another collaboratively. This works similarly to microcredit loans that are only given to individuals whose friends agree to back them up.

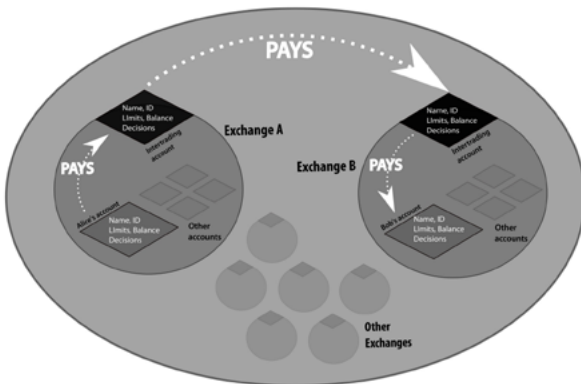


Exchange A

This diagram shows a single exchange/ ledger / currency circle containing diamond shaped accounts. Each account has properties such as the id, the name, minimum and maximum limits, the governance decisions it made and of course its trading history resulting in its balance. Note that there is no money, no stuff going between accounts, only records of flows between accounts on that ledger, and thus nothing can enter or leave the system.

The best way to think about intertrading is as a mutual credit system of mutual credit systems. The meta-system has the same mechanics and same governance issues as the groups themselves with the additional question of conversion rates. Members can pay members in any other system within their normal account balance limits, but limits must be maintained also between the groups, in the same way that citizens can send money abroad but the government must guard the balance of trade.

This is accomplished by nominating one account in each system as the intertrading account, and all transactions with that account must be mir-



Meta-Exchange

rored by or coupled with, an account in the meta-system. Then meta-payments can flow between systems.

Also note that in the credit commons we talk about ‘conversion rates’ rather than the expected ‘exchange rates’. This is because credit is not a commodity which is exchanged for something of economic value, credit is merely a promise expressed in units of value. Thus a promise from one group to another is converted just as centimeters are converted to inches. From an economic perspective the effect is similar to exchange because credit extended to another group is set aside and unavailable for use at home.

It is not necessary that all collaborative currency projects be bound together in one metasystem, with one system of governance and conversion-rate regime. The meta-system can be applied fractally, allowing any groups to choose their own trusted partners and form their own collective trust-relationships. This idea has been explored more in writing by Swiss innovators¹³⁾.

The resulting nested exchange network resembles the aforementioned pan-European banking system in the late middle ages:

*A pyramid of credit could be constructed with the obligations of local tradesmen at the base, larger wholesalers in the middle, and the most exclusive, well known and tight-knit circle of international merchants at the top... The private trade credit of even the humblest local merchant, in other words, could break its parochial bounds, and, endorsed by a cosmopolitan mercantile name, become good to settle payments on the other side of Europe, where its original issuer and his business were entirely unknown.*¹⁴⁾

13) <https://ijccr.files.wordpress.com/2013/04/ijccr-2013-huber-martignoni.pdf>

14) Money, The Unauthorised biography, Felix Martin 2013 pp100

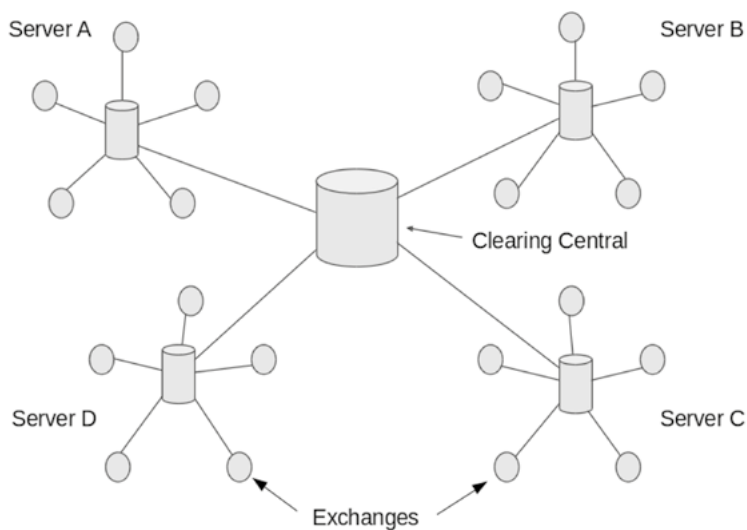
INTERTRADING EXPERIENCE OF CES

Community Exchange Systems has been practicing intertrading since 2004 when the software was modified to link several stand-alone exchanges using the CES software. CES is important because it is the only network we know of that is running different software platforms connecting with an API through a central hub, called Clearing Central, and because we are working to open source everything to make the system fully inclusive. It only supports one level of nesting and all the ideals stated above are only loosely applied. For example balance limits exist but are not enforced, no participative governance model has been developed because it has not yet been needed.

The conversion rate mechanism was devised to mitigate the international inequalities which arise from pricing things in different national currencies. Each exchange chooses whether to use national currency or time as its value reference. The time needs no conversion, and those using national currency are converted through an estimated hourly dignified wage¹⁵.

After CES became popular in Australia, the team there wanted more autonomy and responsibility. In 2012, they cloned the software and together with the CES lead developer, created a transaction clearing server, Clearing Central, which allowed exchanged to remain interoperable regardless of which server they were hosted on. Shortly after, a team in Spain also built their own CES platform, migrated numerous sites onto it and connected it to Clearing Central. The Australian timebanking program created in partnership with CES, but on yet another platform, is also planned to be connected.

Structure of the Community Exchange Network



15) <https://www.community-exchange.org/home/how-it-works/conversion-rates>

16) Appendix B shows how CES has grown in numerical terms.

17) https://en.wikipedia.org/wiki/Impossible_trinity

All of this was unnoticed by an army of blockchain developers, many of whom seem to want to both disrupt the financial system and accrue great riches at the same time.

Clearing Central has become a critical application for hundreds of local exchanges¹⁶. CES proposes that the whole timebanking movement (which uses mostly about 3 different platforms) to connect, but Clearing Central, which was built in a hurry by a volunteer, is a weak, centralised link.

DESIGNING A CREDIT COMMONS

The main design challenge is managing trust within and between groups. The problem is that collaborative credit has no commodity backing so it can't be redeemed on demand, and that in a mutual credit system there is no equivalent of legal 'enforcement' of debts. Credit therefore can only be issued by mutual consent within comfortable risk-bounds, and only social sanctions are permissible for defaulters.

To keep this paper short we can not lay out a full design, nor would we do so without more expert support. We would like to highlight the following subjects as deserving of exploration.

MUNDELL'S TRILEMMA

The Impossible Trinity (also known as the Trilemma) is a trilemma in international economics which states that it is impossible to have all three of the following at the same time:

- A stable foreign exchange rate
- Free capital movement (absence of capital controls)
- An independent monetary policy¹⁷⁾

We feel that neoliberal economics has sacrificed independence and policy-making in favour of free capital movement, which is anathema to equitable exchange when the capital always flows in the same direction. We propose to start from a position where each group is sovereign and is based on voluntary agreements to exchange. If there is accumulation, it is not to be of money or credit.

In Western Austria 'talents' were flowing from a rural Tauschkreis to a nearby urban one and both systems were stuck on their respective limits and in danger of freezing. They put their heads together, organised a rural festival, and invited the city folk to spend their talents back to restore the balance.

GOVERNANCE

Credit, being a social tool, cannot exist without some kind of mediator or process between creditor and debtor because no contract can cover all eventualities. We see in patterns in history that indicate governance is much more important to the success of a monetary system than whether it is metallic, fiat, or credit by nature.

Since in a mutual credit the risk is shared fairly evenly, every member should have a say in the allocation of credit limits. Much experimentation is being done with humans and with software on new methodologies for deliberation and collective decision-making¹⁸⁾. We foresee 3 governance questions that every group must agree on.

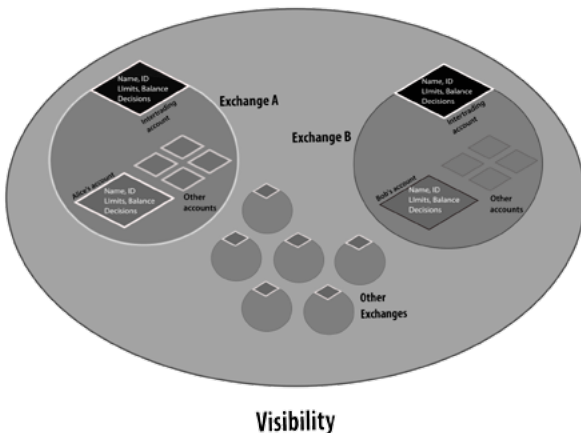
1. the minimum and maximum extents of trading
2. the criteria for strangers to join and seeing the ledger
3. the consensus algorithm itself i.e. how much is a quorum? Who can veto etc.

At each level of nesting there needs to be a governing process comprising all its members - probably one or two representatives from each member group.

There is also a problem of governance at a higher level - who should decide about development protocol itself, what features are required, how they are paid for? These are questions each governance model needs to address in their specific design.

PRIVACY

The credit commons has simple, clear and absolute privacy rules. Each group is regarded as a private association with the ‘right to free assembly’, their identities and credit relationships unavailable by default to non-members. It is never necessary for anyone to see the whole system, as in Bitcoin, because the only integrity that matters is the integrity of a member’s own groups, and how much each is trusted by its peers.



Privacy is not supposed to be total though. The principle is that an account can be seen by anybody it trusts, which is anyone it can trade with. So within a single circle all accounts and all transactions would be visible to all, but it would not be possible to see accounts in a neighbouring circle. However in the meta-exchange, all the intertrading accounts would be visible.

The diagram shows in white outline what is visible to accounts in exchange A. The general rule, working with the above schema, is that accounts cannot see inside circles to which they don't belong.

A PROTOCOL NOT A PLATFORM

In the beginning, the internet was just a network of computers which could talk to each other. What enabled them to talk were common, or even commons protocols such as TCP, email, ftp, http which are still standard today. Similarly the Bitcoin white paper describes a protocol which allowed anyone to build compliant client software and participate with it. Shutting down Bitcoin is about as practical as banning Esperanto.

In contrast, most online innovation nowadays is about building platforms. Platforms are software application that reside on specific machines under specific legal jurisdictions with specific owners. They provide a high degree of endogenous functionality but a low degree of connectivity.

It is instructive to compare a platform and a protocol doing the same job. Uber and Lazooz¹⁹⁾ both mediate between drivers and passengers. Uber is a publically listed company with a massive bureaucracy, a massive debt, and therefore incentivised to grow, to monopolise global transport, even at the price of crushing its own labour force. Lazooz is a protocol which matches drivers and passengers, keeps account with an internal currency and cannot be owned.

The credit commons is an open protocol for community currency groups to make multilateral exchange agreements. The protocol handles reading and writing to ledgers where each ledger has a unit of account, a group of accounts, and some rules. Each group decides its own accounting rules.

It could contain many networks which are not connected at all, and it could contain hierarchies of connected groups. For example all the timebanks in the UK could form a group to manage hours liquidity amongst themselves and Timebanks UK could be part of another group, of all the other national timebanking associations, using the same unit of account,

18) See especially the recent EU-funded project, D-CENT <http://dcent-project.eu/>

19) <http://lazooz.org/>

hours, which is the defining feature of timebanking. The whole timebanking movement could trade with the entire LETS movement if conversion rates were agreed.

The protocol checks the ledger entries won't transgress the agreed balance limits and routes payments between 'twigs' via the 'trunk'. Like Bitcoin it would allow payments between any wallet holders without prejudice or discrimination.

IMAGINING A CLIENT APPLICATION

Like Bitcoin, the Credit Commons is not itself software but would be nothing without a basic client implementation which demonstrates all its features. We can convey how it would work by imagining such a basic client application.

A user double-clicks their wallet to open a window, which reads and writes to a shared online database.

1. Create an account and save the id and passphrase.
2. Create a group by naming the unit of account. Decide the initial governance settings:
 - Choose a membership process
 - Choose / configure / compose a balance limits algorithm
 - Define what proportion of affirmations needed to change
 - Apply for the group to join another group, with a conversion rate
3. Join another group from an autocomplete list.
4. View a list of proposals, and vote on them
5. Create a proposal to change the one of the four group settings.
6. View a list of users
7. View one other account, ledger entries concerning it both in the current group and its balances in other groups.
8. Bill or credit another account either in the same group or parent group.
9. See the new balance, or an error message explaining why the ledger entry failed validation
10. Attempt to deactivate the account / leave the group is only possible if the balance is zero.

CONCLUSION

The credit commons as a protocol embodies a similar libertarian ethic to Bitcoin, but instead of being an open system without trust, it consists of private groups that can choose the degree to which they trust each other. The system need to have no legal existence and no legal recourse; no legal costs and no legal tender; anyone could create an account and make relations with other accounts.

Our two complementary currency networks, Community Exchange Systems and Community Forge are creating free open source software for communities to keep accounts and extend trust. We dream of the big picture and continue to dedicate our time to develop the Credit Commons: the idea, the community, the protocol and the software.

APPENDIX A

Some people and projects doing laudable work to raise awareness and improve our monetary systems:

Positive Money, a UK campaign to restore monetary sovereignty to government, the American Monetary Institute²⁰⁾ and their compatriots around the world.

20) The founder of which, Stephen Zarlenga, wrote the excellent *The Lost Science of Money*

Individuals such as Margrit Kennedy, Bill Still, Michael Linton, Mary Mellor, Michael Hudson, Shann Turnbull, Pat Conaty, Richard Douthwaite and others who have worked for decades to communicate the deeper essence of monetary science.

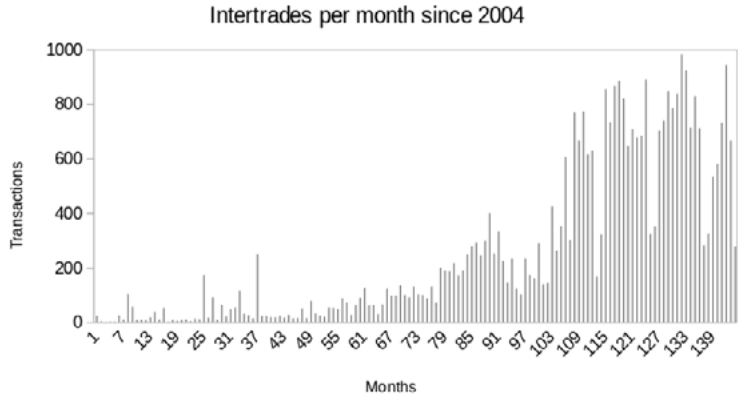
Hundreds, even thousands of local complementary currency practitioners around the world including the Swiss Wir, the Bristol Pound, Berkshares, Timebanking, Fourth Corner Exchange, LETS, Banco Palmas, STROhalm

Other innovators now building new tools for work, rewards, and reputation which eschew monetary exchange and valuation.

All those working in solidarity economy enterprises meeting human needs and minimising abuse of the environment and our co-habitants in it.

APPENDIX B

Chart showing numbers of trades between exchanges in the CES network from its creation to the present day. Note that around month 105 all the Australian exchanges forked onto another system, so trades between them are not represented here.



The data reflects various stages in the history of the system so only two trends are really identifiable. Firstly the growth over time reflects the growth of member exchanges and their members more than any particular desire on the part of those members to intertrade. Secondly an annual cycle is visible towards the end, with drops around August/September.