LocalPay Technology Proposal

For the massive scaling of community exchange networks.

Empowering community exchange

http://localpay.tech

Introduction

The climate news of 2018 has exposed not only a need for more urgent action but also how sluggish governments have been to respond. It is imperative that grass roots movements step up, but they are rarely able to organise effectively at scale because of their decentralised nature. This is especially problematic for the community currency movement which remain so small they are held together more with social bonds than economic expedience. Donors looking for direct social impact usually overlook these initiatives, or fund them one at a time, which means what infrastructure exists, has been built by enthusiasts and cannot keep up with growing demand and pace of change. Hundreds of projects have been left stranded, with more every year.

We applaud the solid work being done towards reforming the money system, banking system and economics education. But those things are all incremental and radical options must be put on the table as our human habitat starts to break down. We see a lot of donors contributing to high risk one-off shallow initiatives and too often the impact stops the moment the money stops. Software projects are notoriously risky.

With proper infrastructure, social movements would be able to organise much more effectively and efficiently, fail less often, and create more economic and other opportunities. A community currency need no longer be the province of a small group of friends who only exchange, but one of many organising tools supporting acknowledgement and cooperation, investment and production in a network of grassroots networks.

The CCC is ready to go mainstream with a new technology that will enable grassroots groups of all concerns to network together instead of being siloed on different platforms. LocalPay is a proposal to produce and publish this technology, migrate our local currency groups to it, and reach out to social movements and activists to encourage to become compatible, (as several are already). This will at the very least, keep the community currency sector alive for another decade, but also we believe signal a step-change in how social movements organise and cooperate.

Only recently has a new web protocol been published which allows social networks to connect together. As networks grow, the whole is exponentially greater than the sum of the parts. Grassroots movement must seize the moment to connect and cooperate. The Credit Commons Collective is an already large and diverse network with software expertise, and will be the perfect convenor.

 A summary of this proposal can be found on http://localpay.tech LocalPay is one of the branding options for the new software and standards and so is used for the name of this project, though the final choice of brand will depend on the findings of the project.

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History of grassroots exchange

Money is a **social technology** which facilitates **exchange** at **scale**. The national and intranational money systems of the world are now mostly controlled by **private interests for private profit**, and their policy of keeping money scarce actually hinders the process of exchange. Conventional monetary reform seeks to persuade the government to change the law, but it can sometimes feel like a war of attrition. On one side is a corporate lobby with near infinite resources which tries to put more power in the hands of private banks; on the other an uncomprehending and distracted public - which has yet to win a single skirmish.

In the 1990s a few thousand groups following the LETSystem design manual[1] sprang up around the developed world, providing a rare forum for the public to explore monetary theory. This was the start of the modern local currency movement, which attempts to build local wealth and positive economic change from the bottom up, rather than engaging with government - some of them even rejecting government funding

Local exchanges are formal and informal groups of citizens who exchange goods and services. Instead of using conventional money, they declare their own unit of account and use it to keep records of transactions on a common ledger. Note that this unit is sometimes legitimately called a "currency" although no issuance takes place. These group collaborations create numerous opportunities for tackling **social exclusion** and poverty and supporting more **environmentally aware** lifestyles. In the early days some governments funded these projects although sometimes funding was refused because of strong feelings of local sovereignty.

The next decade saw another wave of local exchanges call Time Banks; they shared the ethic that everyone's time had equal value and they used the hour as the unit of account. They were coordinated at the national level and many donors switched to timebanks, finding them better organised and more receptive to government support.

All these local systems gradually migrated from paper, post and telephone to web platforms, written often by retired developers in obscure languages. These days a couple of thousand networks use just a handful of software platforms. (See Appendix A) These platforms are mostly produced and maintained by volunteers, and generally lag about 10-15 years behind commercial software; sometimes ugly and hard to use. Some platforms have been abandoned by their developers; too much of the movement is now old and unaware how important, and how dire the software situation is.

As the global economy is hollowed out, grassroots organisation is on the increase along with experiments in economic alternatives. Very often Facebook is the best platform because so many people are already on it, but it has very little functionality for organising or economic engagement. There are tools for individual functions or for individual groups but no software

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[1] http://archive.lets.net/gmlets/design/dm1%5E1.html

actually exists which can a global grassroots movement and all the things they may want to do.

Real sustainable development

Local exchange impacts the economy by creating a context for local people to meet each other's needs reciprocally rather than accessing global goods and services from the global marketplace using scarce money. Members typically enrich their neighbours by doing things like:

- sharing cars
- production, processing or cooking food
- lending tools
- passing on second hand items
- helping with housework
- caring for children and the elderly
- educating each other, especially in languages
- fixing computers and training in their use.

There is no shortage of theory about how complementary currencies affect the economy.[2] Unfortunately **economic benefits** are hard to gage because standard economic indicators usually measure the movement of money. However, economic benefit is certainly felt by those (few) who commit to living as much as possible through local exchange - some report it can supply more than half of their economic needs.[3]

Scholars studying complementary currencies have shown they bring significant **social benefits**[4] by combating loneliness, valuing more people, giving people **permission to ask** for what they need.

Scholars studying **environmental benefits** of local currency & exchange systems have shown how projects can be designed to further specific environmental goals such as promoting recycling[5], but we found general purpose complementary currencies much less studied. Some advocates evoke degrowth discourse, sustainable development, and the supposed environmental impact of large-scale economic relocalisation, but all these benefits are indirect, hard-to-measure, and ultimately unproven.

The Credit Commons Collective partners thought that a convincing case for significant direct environmental benefit based on actual data would be very valuable, so we conducted our own an environmental impact assessment this year and found it to be a very complex issue.[6] Our initial findings indicated that at least 5-10% of transactions (such as the above) had a direct environmental benefit. However these findings were inconclusive because of the

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[2] See https://ijccr.files.wordpress.com/2013/11/ijccr-2013-groppa.pdf
[3] See the testimonies on http://localpay.tech/benefits
[4] Gill Seyfang, Noel Longhurst (2013) 'Growing green money? Mapping community currencies for sustainable development', *Ecological Economics* 86 (2013) 65–77
[5] NEF (2015) *Money with a Purpose,* page 61
[6] As reported in Open Democracy: http://bit.ly/2OMbaXB

brevity of the descriptions and diversity of groups surveyed. The LocalPay project would include more rigorous examination of that data.

To us, these classical 'sustainable development' benefits are more theory than practice at the small scales at which they currently occur. This year, fears about environmental catastrophe have ramped up, fueled in part by our board member Jem Bendell,[7] He argues that while mitigating climate change is still a priority, the now inevitable biological, social, economic and political chaos of a warming world necessitate our 'deep adaptation for our civilisation to survive.

The LocalPay agenda is less concerned therefore with ticking sustainable development boxes, but with the urgent work of organising a new economy which can better handle the coming disruption. To us that means building localised social and hence economic structures which enable

- local production (reducing dependence on globalised supply chains),
- local control of credit and investment,
- local governance

The infrastructure for all of this does not yet exist, not even nearly. The systems of exchange we are passionate about **must be integrated** with the other systems, and they must be locally owned yet interoperable.

The LocalPay project is an attempt to **give momentum to what is already happening** and without centralised authority to nudge all the social movement towards a **technical convergence** to enable a more coordinated and efficient response to the crisis.

Sustainable development is meaningless in the current milieu when all the governments and corporations believe in growth at all costs.. We believe that the vast majority of ordinary people care about social and environmental justice much more than our political leaders.

We passionately and demonstrably care about sustainable development. It was our friends and allies who gave decades to get those things on the today's agenda. We have been saying for years that these kinds of interventions are cosmetic, and these things can only change meaningfully through systemic interventions. We are specialists in alternative economy, published in academic journals and by the UN. We don't need funding to pay our own salaries, working outside the Overton window for so long, we have learned to subsist on air alone; We have done all we humanly can, LocalPay is the culmination of years of practice and reflection; it is our prescription to continue and magnify that work. We can go no further without serious support.

From our perspective as a tiny organisation, it is the largest institutions, projects and budgets who should be held to social, environmental and political criteria. Requiring such things of an tiny activist enterprise is irrelevant and distracts from the systemic change for which we strive.

[7] http://www.lifeworth.com/deepadaptation.pdf

Our time on this planet is running out. Sustainable development practitioners need to focus on systemic intervention and donors need to take more risks if meaningful change is to be affected.

A track record of collaboration

Over 20,000 people in 300 community groups in 20 countries are now federated together on our three platforms. Last year they recorded around 800,000 hours worth of activity. The operational name for this federation is the Credit Commons Collective (CCC), run by three very small but well-established non-profit organisations: CES, CES Australia and Community Forge for 20, 6 and 10 years respectively.

Those three organisations started collaborating in 2014 when together they adapted their software for use by the government of New South Wales, Australia.[8]

Since then we have been working towards a common future. We made significant progress towards moving to a common platform (Drupal 8). As part of this we built an open source web service to index all offers and wants[9]. We improved the Clearing Central service for logging transactions between groups. We built a standard backend and API for serving a mobile app[10], and nearly finished the app itself.[11] Ultimately this work was too great to complete, but it meant that much of LocalPay is prototyped.
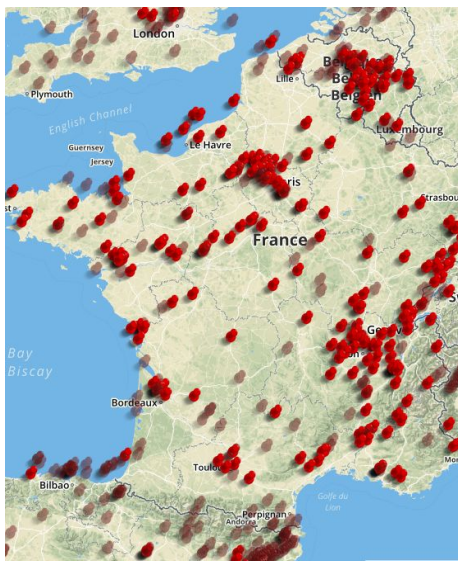
We did however complete this map of the 350 community currencies alongside another 1500 projects in adjacent networks.

The image shows the densest part of the network, with each red pin representing a local group hosted by the CCC, and each grey pin representing a group in an adjacent network. The live version is available at http://www.creditcommons.net/map. Below the live map, are recent statistics counting users and transactions.

Over the last fifteen years or so, these hundreds of projects migrated to a few platforms. This was an obvious progression for such grassroots groups because software was a constant headache for them and shared platforms were able to give them better tools for less anxiety.

We are sure that these shared platforms made life much easier for these groups, but they did not usher in an era of growth for the movement.

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[8] http://timebanking.com.au
[9] https://github.com/matslats/solsearch
[10] https://github.com/matslats/commex_server
[11] https://github.com/mayel/LETS-app

Eventually we realised that next step is not to aggregate more groups onto less platforms. Rather, to achieve massive scale our software instances need to be able to 'talk' to each other. As a result, LocalPay is not about coaxing more local groups into a dependent relationship with us, but about creating connections between large numbers of groups, and using a new web standard to build *the* network of networks.

The massive scaling of alternative economies

The alternative economy, having never been centrally organised or funded, is inevitably very disconnected. The way software works reinforces the separation as each group or movement is entangled with its platform and history of software choices, and each platform is a world unto itself. This meta-structure of the internet mirrors private property and works really well for corporations, but it is less good for the overlapping, dynamic networks structures of the alternative economy. So although members of Transition Towns, and the Global Ecovillage Network should have loads to say to each other, they can't share data across their respective platforms even when they live next door and have friends and projects in common.

That could all change with a new web standard called ActivityPub.[12] A web standard is like email or HTML that enable everyone to settle on speaking the same language, even if they are using different software. ActivityPub determines how information should flow between social networks, and it means that all the social networks which implement the protocol in their software can participate in a larger network. In economic terms, it means that thousands of local groups in scores of networks will now be able to participate in a decentralised online market, advertising their goods, maybe also their needs, and accepting each other's currencies if they please. Each one can put a shop in a common space, so instead of scouring the internet for niche stores to buy fairtrade goods, they will be there in your social network already. The protocol will enable a million small organisations to assemble and compete with modern monopolies like Amazon, Ebay, PayPal, Uber, AirBnb.

ActivityPub already has 1.5m users and 1500 hubs, though most of the software is very basic social networking so far,[13] We want to jump into this stream, populate these new markets and inform and help others to get there too. We have already started.[14]

We want to bring credit systems to the party showing how to finance things without money.

So when we say 'massive scale' we mean

- an improved user experience of the software will help our communities to recruit more members, especially younger ones;
- connecting our member communities to each other, creating new opportunities for collaboration and exchange;

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[12] See https://www.w3.org/TR/activitypub/
[13] See https://the-federation.info/protocol/activitypub
[14] See our cryptopad https://bit.ly/2NMwASJ

- connecting our three networks to other grassroots movements working for social and environmental justice, who are adopting the new web standards, to make them participants of a larger whole, while retaining software independence;
- and offering our accounting tools to other communities to widen the circle of exchange.

Software is widely needed

The original LETS platform, Cyclos,[15] was extremely well built and free to use, being funded for many years by the Dutch government. It was used in projects and experiments all over the world, most widely by the German and Austrian *Tauschringe* movement. Around 2014 the funding stopped and the next version, Cyclos 4.0, closed its code adopted a proper business model. Most of the complementary currency movement have told us said they insist on open source software, which means they are at a dead end - they need new software.

We know of around ten platforms widely used in the local currency movement. That sounds like a lot but most of them cannot be used for innovation because they are too rigid, closed, old, or fragile or dead.

Grassroots software

The table in Appendix A shows how only three of these platforms are actively maintained, and only one of those (ours) is also open source; even that bears a high risk because it depends on only one developer.

This risk, and worse, is typical if not endemic to community-built infrastructure. It is easy to imaging the same story playing itself out in any grassroots organisation....

Ideologically motivated software developers bear the startup risk of new projects and produce prolifically and heroically rather than seeking funds and collaborators and developing sustainably. In such an environment, there is no long run. In the short run, it is always easier and cheaper and more rewarding to add new features than to consider sustainability. If the project grows that policy leads to top-heavy software (imagine trying to fit a 747 engine to a bicycle), and to code which so resembles spaghetti that even paid engineers might refuse to touch it, for fear of unanticipated consequences.

Eventually the software is finished, not in the sense that it is complete, but in the sense that the developer is spent and nothing more will be added.

By this time **new software is needed** more than ever, but the heroic developer cannot face five more years learning a new language and re-coding everything, but he now really understands the need for building sustainably. The locomotive of technological progress steams on leaving its passengers oblivious to their carriage being unhooked.

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[15] See http://cyclos.org

The community currency software is no longer being maintained, and is slowly relegating most of the movement to the footnotes of history. These platforms have little prospect of ever doing things modern users increasingly take for granted, like

- fitting on a small screen (mobile phone)
- showing the nearest members to you (geolocation)
- relaying posts to Facebook etc.
- Logging in using another service (oAuth)
- efficient interaction with the server (AJAX)
- messaging other members (chat integration)

or having frequently requested new features like

- members controlling who can see their data
- incorporating info from neighbouring groups
- community decision making tools
- automated matchmaking between offers and wants.

All applications, no infrastructure.

The Credit Commons Collective is not only concerned with old networks but with new and experimental monetary innovations. New and prospective community currency projects consult us very often. Each startup must set up its governance, policy, currency design, membership, public relations etc. and also obtain, customise, host and maintain accounting software. These are not classic LETS or Timebanks so they have their own distinctive software requirements. They come up against a hard choice between using arcane software for free, something highly inappropriate, or developing their own.

So in the UK alone, hull-coin.org spent many tens of thousands of pounds on a basic accounting app. We were there when economyofhours.com similarly build their app from scratch because there was nothing they could take off the shelf. Totnespound.org came to us for advice when the Bristol Pound could no longer afford to host their payments app but we had no good suggestions to make.

Each of these projects needed their own app, but their requirements were 80% the same. A sector which was organised and resourced would have been able to provide them 80% of the software they needed off the shelf, for free, including features they didn't know they needed, such as participation in a global network with hundreds of other community currencies.

Donors and project managers are focused on tangible results and almost all IT funding in this sector is directed towards individual projects which build similar apps, again and again. From a systemic perspective this is madness. It is like everyone jolting across the landscape in expensive 4x4 vehicles because they cannot organise to build a road. General-purpose **community currency infrastructure** could reduce the duplication, cost, worry, while

increasing the quality, connectivity and longevity of these initiatives. But building common infrastructure requires looking beyond the arbitrary boundaries of any one project.

As infrastructure providers we feel ourselves invisible to both users and donors. The Ford Foundation recognised this in their report *Roads and Bridges: The Unseen Labor Behind Our Digital Infrastructure*

> Just like physical infrastructure, digital infrastructure needs regular upkeep and maintenance. But financial support for digital infrastructure is much harder to come by. [16]

No business model

Many infrastructure systems like water, rail and digital communications imply a 'natural monopoly' and left wing governments used to manage such things in the public interest, ensuring they were accessible all. Infrastructure was regarded therefore as a public good, created through public investment for public benefit, and in many cases, like water and health, available for free at point of use. The thinking now is entirely opposite, and every single asset is a separate financial asset which must yield an income for its owner. Every stretch of road, every tap, every train, every mast. If we want to build infrastructure, the thinking goes, any public benefit must be more than offset by revenues. Only that way will finance be made available. This thinking results in underused infrastructure because some people cannot afford it - sometimes the people who need it most. It also usually means a significant outlay, to monitor usage, bill people and protect the system from poor people.

All but one of the platforms listed in Appendix A are offered for free, partly because the developers have strong values and free time, and partly because these groups, more than in most social movements, are reluctant to pay in money. No commercial software has ever succeeded in this field. Quite the contrary: we know a large part of our success is because our users appreciate our non-commercial approach.

TWe cannot therefore approach investors or financers with a business model which can return their money. We have thought deeply about commercial spinoff applications of this software: some commercial needs are already being met by Cyclos 4; the startups we've seen have all failed to build community; and there is already healthy competition for business barter software. We don't know how we would pay back a loan without our becoming something else entirely.

This also rules out the most fashionable way to raise money for software, i.e. an ICO or token sale. Most tokens are sold to speculators along with a story about how success of the project will translate to a higher token price. Doing this in a credible way means promising to redeem the tokens, but we can't redeem tokens for anything when our core product is available for free. Besides we don't need bulletproof accounting and trustless environments, we need social infrastructure and renewed trust in each other.

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[16] See https://bit.ly/2q4ovQh

Crowdfunding is another obvious option but if we raised less than the required capital for a total rebuild, we would not be able to deliver. We would rather save that option and use it for long-term for maintenance. In the meantime we have started to tell our story to our end users in preparation for this.

CES initially attempted to solve the problem with a transaction levy on every group. It collected a large pool of network-credit. However in practice neither could they find a developer who would accept so much credit, nor could that credit practicably be spent all in the same place without causing serious balance-of-trade issues. We still love this approach but the network is not yet of sufficient size to support software development in this way.

We also tried government funding - it wasn't so long ago that governments took responsibility for keeping infrastructure public exactly to prevent the monopolisation we were concerned about.[17] We inspired an EU Horizon 2020 CAPS proposal in 2015 but were unsuccessful. The expectation that multiple universities be involved along with all the political requirements that go with government money made it feel like our needs were merely a vehicle which could easily be subsumed under several other agendas.

We have been calling attention to these issues since 2011.[18] Community Forge was able to build a volunteer team and thus a sustainable working model around its software but was not able to build a more resilient core of software developers. Today there is a healthy team of around five people meeting fortnightly to support users and create value in other ways in the movement. Most volunteers engage for many years at a time.

As explained, most local currency networks got into orbit with **zero institutional help**, and they have all hit the same software sustainability wall.

That is why this project is a **low risk opportunity** for a donor; the **product is in demand and already supported**. Thus, while the networks run very smoothly year to year, (there are more than enough donations to meet running costs) the hardest thing to find is the capital to renew our core product at the end of its lifetime.

To ensure the long term sustainability of the new software, LocalPay project includes the following features:

- Choice of a modern platform and a popular language which is likely to encourage volunteer developers.
- Three networks collaborating to develop one new platform that they will all use.
- Outreach encouraging other networks to use the same protocols and software components so that the maintenance costs can be shared shared.
- A public relations campaign towards our communities and their members encouraging them to make annual donations to finance feature enhancements and/or the next large upgrade a decade from now.

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[17] See our paper 'Thwarting an Uber Future for Complementary Currencies' https://bit.ly/2Oxyw6Q
[18] See International Journal of Community Currency Research Issue 15 page 86. https://bit.ly/2OyT5jy

- We will also seek to reduce the monetary cost of software development by seeking professional willing to live (at least in part) from the network itself.
- All the software we produce will be high quality and available to all; it will not depend on our financial wellbeing for its maintenance.

These additional factors mitigate the risk of building the software badly:

- Very clear software requirements based on years of specifications and prototyping.
- Full participation from the original developers, who are on the project board.
- Our development partners CoopDevs are an experienced team with a track record and an ideological commitment to this kind of work.
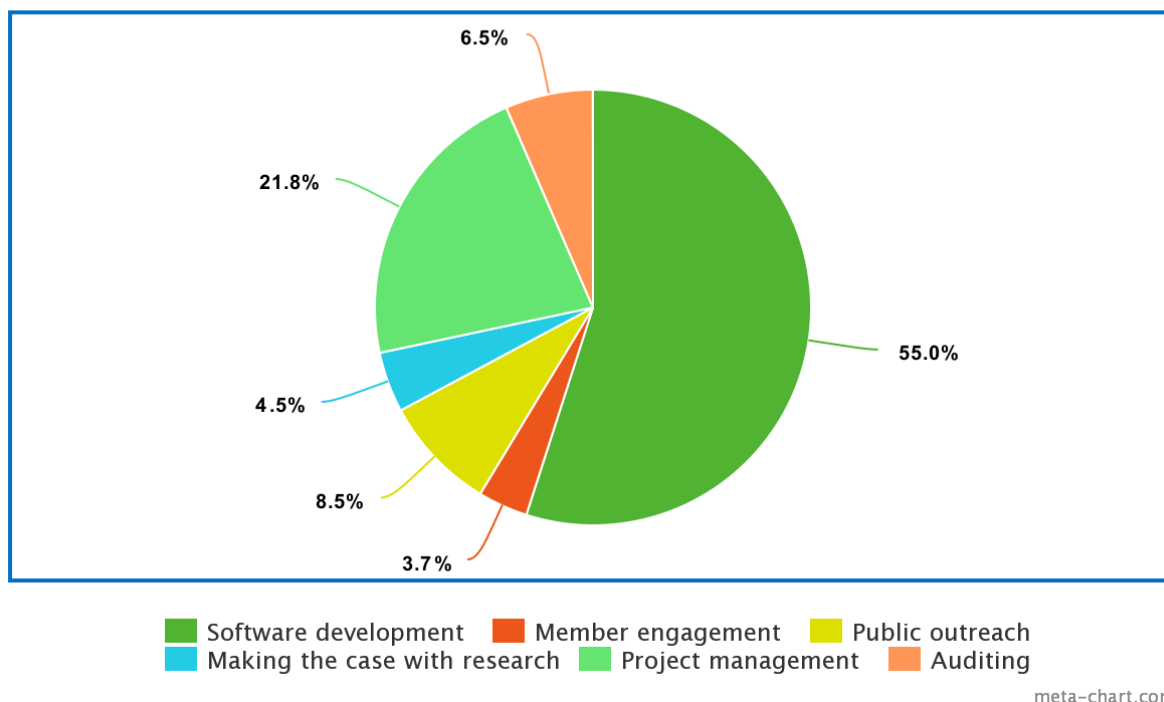- We prefer standards and maintainability over new features.

Once new software and systems are in place, it is our strong intention to continue indefinitely without needing to turn to external sources of funding. The movement must demonstrate this kind of sustainability if it is to serve as any kind of model for the new economy.

What it will cost

The aims of the project require funding over a two-year period. A draft budget has been prepared and is accessible upon request. It amounts to just under 646,000 euros over 21 months. This may seem like a lot but is no more than what has been invested over the years, amounting to around EUR3 per member per year averaged over the previous ten years, or around EUR80 cents per hour's activity recorded on our systems last year. It is also a small sum compared to what many blockchain startups are raising, which have >90% failure rate in the first year.

As grassroots organisations our experience is in delivering software and services for free, so we are reluctant to handle sums of this size. Therefore we have written a provisional agreement with Friends of the Earth (FoE) who would host the project, handling all cash. The budget includes a 7% overhead for that function.

Distribution of funds by workstream

LocalPay.tech

Software development · Member engagement · Public outreach · Making the case with research · Project management · Auditing

meta-chart.com

Software development (55%): Coopdevs would build the next generation of open source community management tools and publish them open source. We will specialise in accounting and offers/wants and we anticipate adjacent movements will publish components we can use, so costs could fall somewhat as ActivityPub adoption increases.

Member engagement (4%): Build a vibrant volunteer community from our current base. Reach out to group members with articles and training materials to grow our volunteer base. We aim to triple volunteer engagement and quintuple annual revenue from groups to the Collective from EUR 5,000 per year to EUR 25,000 by the end of the grant period – with systems in place for continued growth.

Outreach to key networks (8%): Conduct original research and make the case to adjacent networks why they should consider using the new protocols and new software to become part of a global movement. We'll communicate through media articles, conferences, educational materials & workshops.

Making the case with research (4.5%): The vast majority of research done so far on local currencies is based on qualitative data from individual projects, many of which demonstrated very little impact. We will commission new research assessing the viability specifically of exchange networks, based on our trove of more quantitative data.

Project Management (22%): This seems large because it involved coordinating between our three networks, their members, testers, volunteers and boards, and with the implementation partners. It also includes two, week-long full team meetings.

Auditing (6.5%) by Friends of the Earth

A more detailed budget can be requested, costing each task outlined in the workstreams below.

Who we are

Three Founding Organisations

Community Exchange System (CES)

The Community Exchange System started as an experimental online LETS (local exchange trading system) in Cape Town, South Africa, in 2002. In 2003 it was launched as the first mutual credit platform on the internet. CES pioneered inter-trading between communities when exchange groups in other countries joined, creating the first global, alternative exchange network.

In 2008 CES registered as a not-for-profit organisation and in 2012 'CES Australia' was established and a Spanish CES clone, 'Integral CES', started up. Also in 2012 CES won a tender to provide time banking services for the New South Wales government in Australia.

These different systems link through 'Clearing Central', a bridging facility created by CES.

CES's model is a software-as-a-service; it does not currently provide its software for stand-alone instances.

Community Forge

After building open-source modules and a web application for SEL du Lac, the LETS in Geneva, Matthew Slater and Tim Anderson set out to provide free LETS and more broadly, online tools for local communities. 'Community Forge' was a platform formed in 2009 and soon partnered with a cluster of Belgian LETS who helped with testing and specifying software. In 2010 they published their software distribution. In 2011 they built a custom site for Route des SEL, a house sharing network for SEListes. In 2012, there was enough need and interest to start a support team which manages all technical matters day-to-day.

Community Forge now hosts over 250 active groups, runs software training workshops, helps organise the LETS summer camp in France. It is funded only by donations.

CES Australia

The platform is run by an unincorporated, volunteer-run organisation. Directors Annette Loudon, Tania Brookes, Alison Bird and Belinda Moore, all have extensive experience running community exchanges in Australia. An annual budget of $2,000 (AUD) comes from donations by trading groups, supplemented by credit from within the network. CES Australia

is focussed on building awareness of community exchange, promoting best practice, supporting group administrators, and redeveloping the online trading platform.

Relevant expertise

Tim Jenkin

Proposed Policy Director of CCC; Founder, CES, South Africa

Tim Jenkin graduated in sociology and economics at the University of Cape Town, South Africa. As an anti-apartheid activist in the 1980s, he developed a unique crypto communication system that was critical in the realisation of the new democratic dispensation in 1994. In 2018 a major Hollywood movie will be released that focuses on his activism, with Daniel Radcliffe playing him in the lead role. From 1994 until 2014 he ran his own IT company, assisting the fledgeling government into the internet era.

In 2003 he launched the Community Exchange System, the first mutual credit platform on the internet. CES also pioneered inter-trading between exchange groups, creating the first global, alternative exchange network, which now links several similar systems.

Annette Loudon

Coordinator, CES, Australia

While completing her Creative Arts degree, Annette Loudon found herself doing web technology at the beginning of the first dot-com boom. Since co-founder of Construct, one of the first web design companies in San Francisco, she has over 20 years of working on web projects for clients including Microsoft, Sony, and Macromedia.

Annette has developed and maintained WordPress and Drupal websites at the Powerhouse Museum, Historic Houses Trust, ChildFund Australia, and the University of Technology Sydney. Annette also provides tech support and leadership for CES Australia.

Matthew Slater

Proposed Technology Director of CCC; Co-founder, Community Forge, Switzerland

Matthew Slater graduated in theology in 1993 and understanding the growing importance of technology, taught himself multimedia programming, briefly making online arcade games for clients like Ben & Jerry's. He then worked for five years with nonprofits before starting to program community exchange software and living almost without money for several years.

Since co-founding Community Forge in 2008 he has built and maintained its open source software single handedly. He has travelled extensively, building relationships across the alternative economy movement. In 2015 he created the Money & Society MOOC with Prof Bendell, and now does occasional tokenomics consulting for blockchain ventures.

Professor Jem Bendell

Proposed Communications Director, CCC

Jem Bendell is a Professor of Sustainability Leadership and Founder of the Institute for Leadership and Sustainability (www.iflas.info) at the University of Cumbria in the UK, which co-delivers a sustainability-themed MBA programme with over 2000 students online from around 100 countries.

Jem provides strategy, leadership and communications support for chief executives in business, politics and civil society. Previously with the United Nations, he has since served on the boards of international investment funds and small charities. With over 20 years of experience in promoting innovative action for sustainable development, Professor Bendell has written over 100 publications on related topics, including five books. His latest book is titled "Healing Capitalism." In 2012, the World Economic Forum appointed him a Young Global Leader for his work on sustainability.

Professional engineers

Coopdevs

Software development

Coopdevs is an association of people whose objective is to promote technological solutions to support the social economy. All the projects in which they participate are open source and free license. They built and maintain a timebanking platform used by over 100 active timebanks in Spain, and also maintain the software for the Open Food Network. Coopdevs is currently a participant in a Horizon 2020 program called "Platform Labour in Urban Spaces: Fairness, Welfare, Development."

More detailed breakdown

Workstream: Software development

We know software well enough to oversee this project but not enough to code it or manage coders. We are very happy to have a provisional agreement with Coopdevs who can deliver professional quality software and who would also be first adopters of the new code for their own timebanking platform.

Tasks:

1. Create basic hub, installation routine, setup page, authentication, member settings page, and basic mobile client

2. Create modules for member profiles, content management, comments, offers & wants, accounting

3. Per network customisation x3

4. Build data migration routines x3 OR extend existing platforms

5. Enable communities to report usage and other data.

6. Packaging & version control

7. App development

This plan excludes 2 not-quite-essential elements: an index enabling global search of offers and wants, and the rebuild of CES existing Clearing Central service.

All the new web services would be hosted on carbon neutral servers.

All software would be published using the GPL open source license where practicable. In addition LocalPay.tech would publish a suite of open APIs.

Workstream: Member Engagement

Member engagement is critical to the success of this project. We will build stronger relationships with our 20,000+ end users to invite them into a new, more dynamic community. By building stronger relations between us and our administrators of the 350+ member groups, we anticipate less reliance on us and more support from them and their members in the long term. Specifically:

● Firstly to make possible a coherent 'Needs Analysis'. This process ensures we know who the users are, their tasks and goals, the functions they want and need from a system, and the information they want and need to interact with it.
● Secondly to give users a sense of ownership and responsibility for the software, which should increase their engagement in the long term.
● Thirdly to increase long term financial contributions from members and groups, reducing our dependence on donors.

Local groups do not have any permanent staff or expert technologists. Therefore training volunteers on a range of matters from media production to legal compliance will be important to bring them with us on this technology shift.

We aim to triple volunteer engagement and quintuple annual revenue from groups to the Collective from EUR 5,000 per year to EUR 25,000 by the end of the grant period – with systems in place for continued growth.

Tasks:

1. Create and facilitate a mutual support forum for community leaders
2. Design and implement long term crowdfunding campaign.
3. Train lead volunteers in new software

4. Work with volunteers to develop new materials
5. Advise and support existing groups with migration

There are many more than three languages spoken in our networks, but the main ones are English, French and Spanish. Materials will need to be translated to reach all parts of the community.

Workstream: Outreach

We will not be satisfied to be the only users of the new software. This rebuild is not only about connecting disparate groups together, but disparate networks also. Different networks have more or less software expertise and resources, and each has a long and sometimes traumatic history with software. Reaching out to some of them will require a lot of handholding, time, and flexibility on our part. We believe this is a necessary investment for all the strands of the alternative economy are to work together to become greater, much greater than the sum of their parts.

We intend to reach out through existing contacts in all the following directions.

The timebanking movement is structurally very similar to LETS though it tends to be more centralised, and better funded. There are 3 main networks we are concerned to influence.

- Timebanks UK, which is now creaking under the burden of at least 4 different but equivalent software platforms after nearly two decades of ill-informed choices.
- Timebanks USA, which has an excellent platform and community support but little money, and relies on one developer working in an obscure platform.
- hOurworld, which is working well but very outdated, the core code being around 15 years old.

International networks of alternative livelihoods communities are people and organisations who are practicing approaches to economic life informed by concerns for the environment and social justice. Over the years Each of the current Credit Commons Collective team members has built up relations with many of these grassroots networks, such as Transition Towns networks, open.coop in the UK, Global Ecovillage Network, permaculture networks, and several others. Successful engagement would lead to many organisations in these networks adopting the new web standards (though not immediately) with or without the accounting component.

Community Supported Agriculture networks don't have a demonstrable need for community currencies, but could benefit from taking up the new web standards and wider tools we'll be working with. Our implementation partner, Coopdevs manages the Open Food Network software and we will take that opportunity to explore how the new standards and tools can be deployed to to support that network.

The global **climate adaptation community** is a fast-growing network fueled in part by our communication director, Prof Jem Bendell, who published a paper earlier this year pointing out how climate change was far outpacing the IPCC projections, and that in addition to

mitigating it, people and societies need to think about deep adaptation, which means psychological, social and economic responses.

The LocalPay project team would undertake a multi-faceted outreach, creating materials and opportunities for multiple audiences.

Outreach tasks

1. Online relationship building
2. Draft media articles aimed at selected audiences
3. Produce video & practical manual on enviro-impact & resilience
4. Travel to conferences & in person engagement with potential partners

Workstream: Making the case with research

Our recent literature review indicated community currencies deliver clear social impact, but less economic impact and there was almost no data on environmental impact. We will build on this work and present the results at two academic-practitioner conferences conferences.

Action research with Friends of the Earth

FoE will organise a pilot study over a six months regarding the way CCC tools could be used by one of their local groups of FoE members for activities which the community themselves choose (e.g. coordinating volunteering, sharing of tools, rides, local food production etc). They will be supported in this activity by LocalPay project members.

Using the action research methodology, we will engage with one new Friends of the Earth local supporter group to identify and establish it as a community in our model, and report back to FoE after one year. If the results proved positive, FoE would roll out the technology to strengthen all their supporter groups.

Research tasks:

1. Conceptual clarification and data analysis on baseline performance
2. Enable communities to report usage and other data.
3. Presentation at UNRISD April 2019, RAMICS Sept 2019
4. Environmental impact assessment
5. Action Research: Test software and assess with FoE local group

Project management

For the three organisations to work together technically as a federation and to handle other networks who might join, we must establish common communication systems and software delivery mechanisms.

A brand or badge is needed to identify this service visually to the hundreds of local groups within the founding organisations' network and explain the services provided to their members, and to assist transfer with others.

A website would be needed to explain what LocalPay offers its partner networks, and to pull together data about network activity to demonstrate impact.

The same or another site would host the task management system for the Credit Commons Collective (CCC). It would support such teams as

- translation,
- testing,
- development,
- documentation,
- public relations,
- administration and accounting

The LocalPay team members members will need to convene for a two day project workshop (within the first 4 months of the project) and then again after 12 months of the project.

Tasks:

1. Identify and deploy a project management system.
2. Ongoing coordination of developers, testers and volunteers
3. Software specifications
4. Software project management.
5. Create a common 'Visual Identity'
6. Set up staff, volunteer and contractor management systems
7. Opening meetup for all staff & developers
8. Closing meetup for all staff & developers

Impact metrics

Assessment frameworks for complementary currencies have been attempted[19] but ultimate there can be no standard or easy way to measure the impact of complementary currency interventions. Each one may have different intentions, serve a different social sector, use a different unit of account, and use it differently.

The LocalPay software will make available to the public (anonymised and subject to permission from each group) a wealth of data about users and user activity:

Examples of the kind of statistics which would be made available:

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[19] See Place, C. and Bindewald, L. (2015) 'Validating and improving the Impact of Complementary Currency Systems through impact assessment frameworks' *International Journal of Community Currency Research* 19 (Summer) 152-164 <www.ijccr.net> ISSN 1325-9547 http://dx.doi.org/10.15133/j.ijccr.2015.015

- Number of ads shared beyond the local group
- Number of local ads
- Number of participating networks
- Number of local transactions
- Number of transactions between groups.
- Number of accounts with overridden balance limits
- Number of visits per group

However the activity within groups indicates very little about the success of LocalPay itself, which plays no role in the governance and management of the local currencies it connects.

The success of LocalPay would be measured instead by the number of networks and groups plugged into the system, their geographical spread, and perhaps also the density of them, since nearby groups would get more benefit from being connected.

So in addition to the above, we would report on the following.

- Number of groups adopting the new software
- Number of groups using solsearch
- Number of users with global ads
- Number of alternative implementations of the LocalPay app

However, the indicator that we would privately use would stress the cross-group links which the new infrastructure would allow. The alternative economy we seek is localised, yes, but it is necessarily connected, and what is missing is those links connecting each locality to the larger whole. They are missing precisely because the internet and the tools for building it were, until now, more about capturing data than connecting users. We believe the ActivityPub protocol will change that and look forward to reporting on exponential growth of connections between groups.

Contact Information

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Appendix A: Current software

The following chart shows ten of the most popular community currency platforms and their suitability to serve in the future. Open Source means anyone can customise the software for their own purposes. Flexible means the software can serve a wide range of use-cases. A large number of maintainers implies the project is resilient and current, while zero maintainers means the project is effectively dead and stagnating. As a rule of thumb, a sustainable software budget would allow for a complete rebuild at least once per decade.

Platform	groups (est.)	Open Source	Flexible	Maint- ainers	Financed	Last Rebuilt
Hamlets (Drupal 7)	250	yes	yes	1		2012
CES & CES (Oz)	100	-	-	0		2003
Integral CES	20	yes	yes	0		2012
hOurworld	250	-	-	3		2005
TimeOverflow	100	yes	-	0		2015
Community Weaver	200	-	-	1	yes	2015
Cyclos 3.7	350	yes	yes	0	yes	2008
Seliweb	35	-	-	1		2005
Local Exchange	60	yes	-	0		2004
Dutch platform	100	-	-	?		2005?
Flemish platform	60	-	-	?		2005?
Italian platform	256	-	-	?		?