CIRCLES

CIRCLES COOP FINAL REPORT

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CIRCLES IS A PEOPLE POWERED MONEY SYSTEM.

www.circles.coop

INTRODUCTION

The Circles Coop e.G. was established as a registered cooperative in October 2020 in Berlin. The Coop was created by the people who were active both in the developing part of the [Circles pluriverse](#) and in the organizing of the Berlin basic income pilot. Most of them worked at the Basic Income Lab Gmbh until that time and decided to create a cooperative legal entity to have more democratic decision-making and work in an approachable, open organizational form.

Right before the Coop was established, the team successfully launched the Circles UBI protocol, a Universal Basic Income (UBI) system on the blockchain that relies on trust and is driven by communities. What began as an outdoor event for the Berlin community quickly transformed into a global frenzy, with everyone fearing they'd miss out on entering the system. In just a few weeks, 180,000 people created wallets, the majority of whom were drawn in by their curiosity about a project that combines blockchain and UBI. If you're interested in learning more about this time and what it meant for our work, you can check out our blog post: "[Emergence of Circles UBI - Learnings and Lessons](#)".

The amount of people and the load was unexpected for the team, which had originally intended to initiate a small-scale experiment in Berlin. The plan was to extend the invitation for global participation if the experiment showed promise.

Rebuilding and fortifying the infrastructure was a process that spanned several months. Nevertheless, the Berlin community continued to demonstrate commitment, even in the face of substantial challenges within the system, with transactions often proving difficult to process.

Our Coop's plan was to foster a community with care, growing it from within. We believe that trust connections, which are essential for the usability of Circles and the path of transfers, should be underpinned by genuine trust among real individuals. This approach would grant the community a sense of ownership over our collective efforts, thereby creating a resilient economic and community framework.

The value of the UBI and the worth of the CRC tokens are determined by the community's willingness to contribute to Circles. It might sound like a marketing slogan, but this lies at the heart of our concept, reflecting the raw reality of Circles. Our aim was to construct a platform that aligns with these objectives and upholds these values.

The Berlin Pilot began to grow gradually. We arranged monthly markets and assemblies as opportunities to engage with the Berlin community, providing live events where they could use their CRC tokens to purchase goods and services. For additional details on the Berlin Pilot, please refer to the respective section of the report. Further-

more, we provided monthly international assemblies for those who were interested in establishing Circles within their own communities.

We took great care in defining the kind of economic community we aimed to create. Our journey began with small entrepreneurs who joined us because of their interest in alternative economics, their grasp of the value of complementary currencies, and their support of universal basic income. They were motivated and dedicated enough to work with the problems of the beta phase of our system we had during the first year and a half.

Nonetheless, these business partners alone were not sufficient to sustain a healthy economic Circles ecosystem. For Circles to offer a sustainable and valuable basic income, it is essential that vendors can pay their suppliers and service providers with CRC, essentially "closing the loops." This required us to address not only the requirements of individuals seeking high-quality food and self-care services but also the intricacies of the economic sustainability within this complex system. This became the primary task of our CATs, the Community Activator Team.

The Circles Coop works in a strong alliance with the Bitspossessed Collective, which constituted itself after the Circles protocol was launched. They build, maintain and take care of the Circles technology.

So far, we have published various materials explaining the Circles and how to use it in our local communities. Thus, in this report, we won't provide an in-depth exploration of the Circles technology, the technical details of its operation, or the specifics of the wallet generating a basic income. For a more profound understanding of Circles, we recommend referring to our FAQ, exploring our websites (JoinCircles & Circles Coop), and reviewing the whitepaper.

This report is structured into distinct sections, each offering an in-depth exploration of the unique contributions and achievements of every domain throughout our three-year project. We begin with 'The Berlin Pilot and the Community Activator Team,' highlighting their pivotal role in community building. 'Product Design' underlines our design ethos and principles. 'Technical Development' unwraps the core technology of Circles UBI and the wallet. In the 'Marketplace' section, we introduce the online platform that has helped with CRC exchanges, a vital component in Circles' expansion and usefulness. In the 'Research' section, we explore in-depth network analysis and the worldwide connections among UBI projects that have influenced our choices. Lastly, in 'Communications,' we detail how we strategically used communication tools and crafted a narrative to support both local and global projects. Together, these sections provide a holistic view of our exceptional journey.

LET'S BUILD LOCAL
ECONOMY
——————— TOGETHER

1. THE BERLIN PILOT & THE CATS

1.1 THE CATS: COMMUNITY ACTIVATION TEAM

Once the Circles project gained international acclaim, it became imperative to practically demonstrate its utility. That's how the Berlin Pilot project was born. At first, our colleague Julio Linares, a board member, started introducing Circles to several small conscious businesses keen on adopting the system. After the first onboarding, the team detected different needs that were raised by the ongoing development and usage of the wallet.

As the Coop grew naturally, a decision was made to form a small work team known as the Community Activators Team (CATs) by the end of 2021. Their primary role was to support and cultivate an engaged community willing to experiment with Circles. Our focus was centered around enhancing the Circles Berlin Pilot network, primarily addressing aspects such as the subsidy program, and related concepts like the ambassador system or facilitating business onboarding and support beyond the subsidy program within the economic network. The team collaborated on various fronts including promoting the marketplace, collaborating with different domains involved in Berlin community events, managing communication, product development, research (data provision), and strategy.

At that point, the Coop had connected with numerous small businesses intrigued by experimenting with Circles. Additionally, they engaged with various groups, collectives, and enthusiastic circles. This initial cohort of businesses enthusiastically embraced CRC as a payment method.

To support and motivate these businesses, the Coop team devised the idea of providing small subsidies funded by project donations. These subsidies allowed businesses the option to exchange their CRC back into EUR, reducing their risk and enticing them, even when the range of goods and services purchasable with CRC was limited. This measure aimed to propel the local Circles economy to a point where enough products and services would be available in CRC. This growth would facilitate local circular economies (B2B loops), enabling businesses to utilize CRC for major expenses, thus reducing the need for EUR exchanges over time.

As the Berlin Business to Business network gradually expanded, we recognized several essential needs:

Community Activation: Engaging the community through events to actualize the project, increase user participation, and cultivate trust (regular assemblies, community events, markets, off-subsidy activation, trust-building gatherings, ambassador programs, establishing international hubs, etc.).

Materials: Creating materials in various languages to facilitate understanding of the system (websites, FAQs, newsletters, how-to guides, design guidelines, handbooks, educational videos, etc.).

Online Marketplace: Establishing an online platform to make CRC exchange more convenient and organized.

Tax Support: Providing administrative and German tax support for Onboarded Partners (tax assessments, tracking and paperwork for CRC redemption, etc.).

Onboarding Strategy: Developing onboarding processes and determining priorities (criteria, agreements, incentives, phasing out, etc.) Onboarding new businesses to enable users and partners to spend earned CRC (closing the loops). Formulating a comprehensive strategy for establishing local circular economies in Berlin.

1.2 HOW DID WE WORK?

[1]Subsidy program, development, and changes

In 2021 we decided to kickstart the Circles economy in Berlin by providing selected businesses the opportunity to convert a limited amount of CRC back into EUR. Aware that this was not a viable long-term strategy for building a sustainable economic network and flow, we saw the potential to reduce risks and incentivize businesses to join, despite the limited range of goods and services available for purchase with CRC at the time. This is how we started collaborating with a group of pioneer businesses that sold to the rapidly growing and popular network of Circles' users in Berlin. To facilitate the exchange in CRC, we organized monthly live markets, later complemented by an online marketplace, and initiated a forum for Berlin users in the form of a Telegram chat group.

The subsidy program was kicked off offering pioneer business partners an exchange limit of 4000 € per month which was soon lowered to 2000 €. To frame the collaboration between the Coop

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1   Note that transaction tracking tables had to be filled in manually until spring 2023 when the account statement download function was released. In retrospect, it is important to mention that the administrative overhead for both participating partners and the Circles Coop was considerable and represented a barrier to growth, especially for partners with a high number of transactions.

and the business partners, partner agreements and administrative procedures were established. The collaboration involved active participation in events, promoting partners and their products within the Circles community, and supporting research efforts around the basic income pilot. The redemption procedure required filling and handing in a transaction tracking table with the monthly income to be cashed out[2], and issuing credit notes to the partners for their accounting. Limited by our financial resources and the early development stage of the application, the selection and onboarding of new partners was carried out on a case-by-case basis. We identified potential partners through active research and by recommendation of community members, and selected candidates following a consensus-based, internal collective decision-making process. Aspects taken into account included: contribution and relevance to the Circles circular economy in Berlin with a focus on covering existing demands and closing economic loops; alignment with the Coop and pilot's values and mission; diversity of offers and members. We prioritized partners meeting basic needs such as food and healthcare, as well as those offering services with high de-

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2   Note that transaction tracking tables had to be filled in manually until spring 2023 when the account statement download function was released. In retrospect, it is important to mention that the administrative overhead for both participating partners and the Circles Coop was considerable and represented a barrier to growth, especially for partners with a high number of transactions.

mand among other partners such as logistics, tax advice, and accounting services. With this strategy, we aimed to pave the way towards a sustainable circular economy, ensuring a diverse range of offers in the network that supported circular value flows[3]. In this way, we pursued to enable subsidized partners to gradually move away from fiat resources while freelancers and businesses from other branches could join without the need for subvention.

In the fall of 2022, we realized we needed to restructure the subsidy program to meet our objectives and maximize the use of our limited funds. In order to allocate more budget to onboarding new partners and encourage existing members to increase their CRC spending, we began working on a mechanism to gradually "phase out" the subsidy. Under this scheme, partners could redeem a maximum of 10,000 CRC (equivalent to € 1,000 €) per month for the first six months, after which the exchange limit would be lowered by 20% for the following three months, and then by 50% for the last three months. This gradual reduction in the exchange limit aimed at promoting movement within the partner structure of the subsidy program, while also allowing sufficient time to identify and establish necessary connections to close

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3   A detailed review of the results of these efforts can be found in the section *Business partner network, loops, and active community*.

economic loops within the Circles ecosystem[4]. At the time of writing this report, we were beginning to see the results of these changes, visible in the increase and diversification of offers both online and at our live markets as well as in the increase of collaborations between partners. It is, however, important to note that these changes cannot be considered alone. They are the result of orchestrated efforts and significant improvements in the stability and user-friendliness of the circles. garden wallet as well as our increasing efforts to activate and support business participation outside the subsidy program also played a role[5].

Local events, markets, assemblies, and CRC fundraising of the Community

One of the main challenges was to try to make people understand what exactly this revolutionary UBI and crypto idea was about. The aim to show the pragmatic ways of moving Circles in person was for us suddenly crucial: markets and assemblies would turn out to be fantastic feedback places.

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4   See Lessons Learned from Circles Berlin Pilot's Subsidy Program (published 19.05.23, retrieved 18.10.23) for more details on the restructuring of the subsidy program and general learnings.

5   See section *Off-subsidy activation*.

As one of the key points for our work was creating an open community for the Berlin users, it was decided to put a big effort into celebrating regular markets together with the assemblies. There were several reasons for believing in it: first it was a good way to bring closer the concept of Circles since people would then see the variety of products offered in the system all at one place in the market and get real values for their CRC. It was also a way to get good visibility for businesses in a growing community that are willing to support the economic paradigm shift and have more sustainable values. It gave on top the community and the partners the possibility to plan accordingly, so they could experience Circles in person.

The assemblies accompanying the markets gave the possibility to present, inform, educate, and discuss actual topics about the ongoing developments with the flourishing community so their

input could be taken into consideration. They offered the possibility to give and receive trust (and understanding the concept of it) aka get newcomers onboarded and helped by the community. And most importantly to have a personal and direct interchange.

"In the aftermath of the economic crisis in Greece I tried many alternative ways to build pathways for people to cover their basic needs, including of course my own, LETS (local exchange trading systems), to time banks, to complementary currencies, community with supported agriculture, fairtrade, everything I could get my hands on. What I realized is that if the people who have the means to provide basic goods can't afford to take the risk to offer these within an alternative economic system, they tend to not do that, and come up with other creative things to offer instead, but essential needs remain unmet this way and the old systems that act as gatekeepers between people and their needs get perpetuated. It is hard to meet the actual goal of a universal basic income if you cannot use it to cover your most basic needs. Circles provides through an embodied experience a glimpse of what UBI can actually feel like when you can cover basic needs with a currency earned by the mere fact of existing, and I cannot begin to describe how different it felt to be able to get high-quality groceries during the pilot program using my Circles. I truly felt basic needs getting treated like an actual human right thanks to it! For any UBI community it is therefore vital to find a way of building a secure

framework for providers of basic goods and services like housing and food, to be able to offer what they do to the community." - Antonios Triantafyllakis

Another crucial and big motivation for the CATs and the Coop to celebrate the assemblies regularly (the aim was to celebrate them once a month) was to create a democratic base to try to motivate the community to take ownership of Circles and self organize. It was not easy though to find a common day that would fit everyone, but we decided after considering mainly the availability of the onboarded Business Partners to celebrate them every first Wednesday of the month from 18:00 on.

"I'm new to Circles and observe that Circles is used to invite people to organize around a local economy and get together. It's different from my other experiences to strengthen collective thoughts, where people want to form a community before getting to the point of self-organizing to cover needs. In this sense the Circles project tries it the other way around, which could mean that it is more accessible for people who are interested in trying new forms of economies, because they don't have to first go through discussions to find a theoretical common ground." - Robyn, Meta: morfosis, CATs protocols, Assembly April 5th - "Community"

These markets and assemblies took place mostly in Kreuzberg (Berliner neighborhood), at a com-

munity garden called Frieda Süd, a project that aims at neighborly interaction and exchange with a network of community-based partner initiatives, where our tiny house, Café Grundeinkommen - the "pre" entity of the Circles Coop-, was located. Some of these events also happened in Treptow, in the Moos Space, which is home to some of our partners and an incubator space for regenerative economic concepts, space-making, community building, creative practices, and paradigm-shifting projects, that speak to a hopeful future.

The first official market happened in August 2021, and although we would have liked to celebrate it every month, the cold and long Berlin winters as well as the peak summer holiday times wouldn't allow that. Together we had organized 18 markets and assemblies in the past two years, which offered the possibility to purchase Circles and the wonderful opportunity to get connected in real life. Circles users appreciated very much this happenings, since this was the opportunity to have a direct exchange.

Showing a strong and consistent presence in various events and gatherings was not just a matter of participation; it was a strategic move that opened up opportunities and enabled potential collaborations. By actively engaging in a diverse range of events, we extend our reach and build bridges to connect with different communities and stakeholders.

In addition to our regular Markets and Assemblies, our commitment to presence has led us to participate in a variety of events that align with our mission and values. These engagements have proven to be invaluable in broadening our network and exploring new horizons of cooperation.

One such event was the Sommerfest hosted by CityLab in July 2022. This provided us with an excellent platform to showcase the relevance of our initiative within a broader urban and future thinking context. It was a testament to our commitment to not only being part of the conversation but actively contributing to it.

Furthermore, our presence at the Dappcon 23/23 event allowed us to connect with the blockchain and decentralized application community, fostering dialogues that can potentially lead to innovative solutions and partnerships in the realm of decentralized finance and technology.

The first Zero Waste Berlin Festival in 2022 was yet another opportunity for us to demonstrate our commitment to sustainable and eco-friendly practices. This event allowed us to engage with like-minded individuals and organizations, exploring ways to further integrate sustainability into our operations and expanding the network of allies in our shared mission.

Last but not least, we made a significant presence at the Klein aber Fein small Christmas pop-up store in 2022 and 2023, where Circles users would find a wide range of Circles products all in one place. This festive small pop-up shop helped us connect with a wider audience and showcased our relevance in the holiday season, emphasizing the role of alternative currencies and sustainable practices even in the busiest of times.

In summary, our proactive participation in a variety of events, ranging from local community gatherings to industry-specific conferences, highlights our dedication to reaching out, learning, and contributing. These diverse engagements not only amplify our presence but also allow us to explore synergies and forge collaborations with a wide array of partners who share our vision of a more sustainable, inclusive, and decentralized future. Showing up is not just a gesture; it's a step towards unlocking the potential of untapped opportunities and fostering meaningful connections.

1.3 ACHIEVEMENTS

Business partner network, loops, and active community

The pilot project, in order to kick start its operations, granted subsidies for approximately 20 businesses by the end of 2023. Over the past two years, there were some changes, but a subset of these businesses remained involved for the entire duration of the experiment. In total, throughout the nearly three-year period, almost 30 businesses participated.

In terms of the services offered in the marketplace, which were promoted through social media channels and internal marketing, they were primarily related to food, accounting for 33% of the total by the end of 2023. Health-related services accounted for almost 24%, household products for 9.5%, clothing for 4.5%, and co-working spaces for 4.8%.

Following an initial evaluation period, the businesses began to connect with each other, facilitated by the CATs, who organized regular monthly meetings. These gatherings served not only to provide information about the pilot project and additional resources from the Coop but also to promote the exchange of experiences. This included topics such as the best ways to engage with clients, how to promote the use of Circles, and addressing technological challenges. These

meetings also allowed the businesses to get to know each other and their respective enterprises better.

The most significant exchanges occurred among businesses capable of meaningful trade, such as the zero waste store Herbie Unverpackt, entering in the program at the end of 2021 which could sell products from nearly all other businesses in the pilot project due to its business model. Retailers found it convenient to spend their earned CRC within the network, as they could order supplies from other businesses in the network. As a result, more businesses started to engage in trade using Circles, and we observed some loops closing. For example, Roots Radicals and Tiny Farms engaged in reciprocal transactions, with the former purchasing the remaining supplies from the latter and using them in their preserves and restaurants. Meanwhile, Tiny Farms used their CRC to dine at Roots Radicals cantine.

Both businesses Roots Radicals and Herbie Unverpackt were also able to activate the community in a very broad way. The need of food in the community was very big and they were able to attract the most of the people in the Circles community. They realized very soon that they would gain much more CRC than the subsidized one and therefore a need of trading in Circles was successfully born.

Although the path had been paved, not all businesses in the subsidy program were able to establish strong economic connections with one another. The CATs had also just begun to promote the onboarding of businesses outside the subsidy program, which initially showed promise but did not receive sufficient time to fully demonstrate the positive impact of integrating businesses and services from outside the subsidy program into the experiment.

Materials

Throughout our pilot period, a substantial amount of material was generated. This material required ongoing adjustments and expansions as the project progressed. As we implemented changes in the system and gained deeper insights into using CRC, understanding our systems, and conducting business with CRC, we continually updated and customized the existing content.

Certain products were tailored for different audiences within the Circles community. This included materials designed for all Circles users and the community at large, such as the Handbook and FAQ. Additionally, resources like "Circles for Businesses" and "Tax Assessments" were targeted at local businesses. Furthermore, specific materials like the design guide were created for individuals within the community with special interests and a willingness to contribute.

Here are the latest versions of these materials:

- [A Handbook For Implementing A New Way To Think About Money](#)
- [Frequently Asked Questions](#)
- [Circles For Business Users](#)
- [Tax Assessment For Businesses In DE](#)
- [Design Guidelines](#)

Doing business with Circles - Taxing and Bookkeeping

For two years, employing our complementary currency Circles (CRC) in Berlin and engaging businesses from the outset to boost the Circles economy, crafting valuable offerings for the community to spend their CRC, and offering a real-life UBI experience has prompted extensive inquiry, experimentation, research, and collective contemplation about the implications of using a currency like CRC as an authentic payment method for businesses.

This in itself is super interesting and complex. To add to the level of complexity, we also supported a subsidy program where selected businesses could redeem their CRC income into Euro if needed. This means businesses had to include their CRC sales in their bookkeeping system and manage to bring this together with our currency exchange at the end of each month.

Moreover, we operated with blockchain-based technology utilizing a web of trust, occasionally resulting in unexpected behaviors such as transfers not consistently functioning as intended. As a result, transactions occasionally required division into smaller amounts, sometimes spanning multiple months.

In essence, handling CRC as a payment method in businesses parallels dealing with Euros. From a tax perspective, CRC aligns with standard currency regulations. Tax obligations and accounting procedures for CRC are akin to those for Euros, with the only distinction being that payments are processed via a Circles wallet rather than a traditional banking or cash system, resembling the utilization of Paypal as a payment method.

Shared Wallets In Circles

For using CRC as a business, a Circles shared wallet is used instead of an individual one, because unlike individual wallets, a shared wallet does not issue UBI. Confusing the two would make accounting messy and complicated.

A shared wallet is treated like a regular bank account. The only difference is that CRC transactions have to be accounted for in Euros, using the real Euro value for each transaction. This is necessary because a business must pay taxes, and according to the German tax law, we cannot yet pay our taxes in CRC.

Accounting In Circles - Stating The Euro Value Of Transactions

For the tax authority to accurately calculate taxes owed, it requires precise knowledge of the Euro value for all sales, whether in Euros, CRC, USD, or any other form of payment.

Hence, sales made in CRC by businesses must

be accompanied by invoices indicating both the Euro and CRC amounts. This dual currency representation should also be applied in the business's accounting records.

A recommended practice involves attaching screenshots from the Circles wallet to respective accounting documents. These serve as transaction illustrations and confirmations of payment. It's crucial to ensure proper storage of all CRC transaction records.

In essence, the accounting process for Euros and CRC remains largely similar, except that CRC invoices entail both the CRC and Euro values, and a confirmation of CRC payment should be provided.

Similarly, for cash sales, each individual transaction or a consolidated receipt/invoice must detail the Euro value.

When utilizing accounting software, connecting CRC income to the corresponding invoice poses a challenge. Currently, no software seamlessly integrates with a Circles wallet. Therefore, manual adjustments are necessary, depending on the software's functionality.

To illustrate that no rocket science is involved, here are some testimonies from our business partners:

"I just make sure my prices reflect the prices already with taxes. I send in my CRCs sheet to the tax accountant and often screenshots of my table and that's it! Hasn't caused any problems so far :)"

"It's exactly like your system with euros, just make a separate CRC column in it [your bookkeeping table]. I run all CRC transactions in the same accounting place but very separated so I can find them and not mix them with EUR. I still mark them in EUR value but I know exactly that it was CRC. I also have a category "Circles payment". I mark the sum in EUR and add 19% as usual.

Since CRC transfers don't always go through on the first attempt, be sure to keep good track when parts of payments from customers arrive and how much is still pending. These sums are quickly getting lost or forgotten."

Declaring Taxes In Circles

The Universal Basic Income (UBI) distributed through individual Circles wallets remains non-taxable. However, concerning businesses, the taxation intricacies hinge significantly on each business's unique tax and legal circumstances, akin to handling business transactions in Euros.

The overarching principle to follow remains consistent: manage CRC transactions just like handling Euros. Particularly in Germany, this approach varies based on the taxation method employed. CRC transaction recording in the book-keeping system can be guided by either "deferred taxation" (IST-Versteuerung) or "taxation on an accruals basis" (SOLL-Versteuerung), depending on the applicable rules.

a) Deferred taxation (IST-Versteuerung): A trans-action is entered into the accounting on the same date money comes in or goes out. This is usually the default for smaller businesses like business partnerships (Personengesellschaften).

Example:
Service period: 15.11.2022 to 31.12.2022
Invoice date: 03.01.2023
Receipt of payment: 02.02.2023
Value date (taxable): 02.02.2023

b) Taxation on an accruals basis (SOLL-Versteuer-ung): A transaction is taxable at the performance period/time of value date.

Example:
Performance period: 15.11.2022 to 31.12.2022
Invoice date: 03.01.2023
Receipt of payment: 02.02.2023
Value date (taxable): 31.12.2022

Off-subsidy activation

As described in the chapters above, we developed different community activating strategies to unfold a local economic system in Berlin based on Circles (CRC), that would enable us to explore the introduction of a community-powered basic income. Due to the decision to kickstart the Berlin pilot through a subsidy program a good amount of our efforts were concentrated in allocating funds in a way that would enhance the overall participation of the community. The following three cases illustrate the logic behind it and what the experience was like for different partners.

Meta:morfosis: A self-organized therapy space that joined the subsidy program in July 2023. By subsidizing the collective space, which was sustained by the rent paid for the use of the rooms, health practitioners were incentivized to offer their services in CRC which they could later spend to pay the rent. As a result, the number of health care offers accessible in CRC increased, making it more attractive for freelancers from other branches to offer their services in CRC, since they would find in meta:morfosis the possibility of covering their basic need for health care in the network. While more exhaustive qualitative research would be required to analyze the impact of this strategy, conversations with Circles partners suggest that the approach was bearing fruit.

Jan, Visual Walkabout: a visual storyteller-enthusiast with a holistic approach to cross-media communication solutions. Here is his testimony in his own words.

"My first contact with the Circles community took place at one of the monthly markets and assemblies organised by the Circles Coop. It was there that I met other Circles members and realised the vision went beyond offering a digital currency and payment system. The vision of establishing a community-driven basic income and local alternative economy resonated with me. After the market, I decided to offer my freelance services in graphic design for CRC to gain new customers and contribute to the project. I considered applying to the subsidy program, but I wanted to first test how my offer was received by the community.

It took some time until the first collaboration requests came in, something that did not surprise

me as design services require a higher investment than for example buying veggies. The projects I was contacted for were interesting. I ended up making the e-book layout for a children's book, designing a book cover for a collection of poems, a flyer, and a storyboard. These projects were different from most market requests in the sense that they were smaller, passion-driven projects that people would have probably not be able to afford with Euro but Circles made it possible.

Suddenly I had a lot of CRC and had to make sure I would spend them. I started going to regular acupuncture appointments, and tried out foot reflexology, Gestalt therapy and all the food offers there were. I do have to say it was time-consuming to look up meaningful offers on which to spend my earned CRC on time. It often involved coordinating with providers and physically going to places. It worked out quite well for a few months until I went on holiday for around 3 weeks. By the time I got back I had accumulated a good amount of CRC due to the regular UBI issuance which added to my CRC earnings. Soon after I heard the Circles Coop and subsidy program was closing and many of the providers had stopped accepting CRC. This meant a loss for me as I will most likely not be able to spend CRC I earned through my services. While it's a pity the pilot had to close just when collaborations with other business partners were arising, I'm happy and grateful I was able to be part of it long enough to explore and experience the multifaceted nature of the project."

Ingrid: A small, non-subsidized business owner, who shared her experience with Circles. She participated in our Wednesday markets, offering her handcrafted items. The Circles basic income gave her a sense of abundance, encouraging her to spend Circles generously and actively support her community. In contrast to feeling blocked when thinking in Euros, Circles fostered a playful and open attitude, allowing her to experiment. While challenges remained, her involvement in the progressive Circles community, which focused on sustainability and social justice, brought her joy and a sense of purpose.

Ingrid's message reflects her journey in Circles, from participating in markets to embracing the abundance and community spirit it fosters, even as she faces the marketplace's closure. She appreciates the values the Circles community represents and is open to addressing any further questions.

Ambassadors / Coop Space, Femmia

Parallel to the Subsidy Program the Circles Coop worked on community activation strategies, which would require none or little subsidization to grow the Circles community and pluriverse[6]. Particularly noteworthy was the development of

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6   Pluriverse refers to autonomous Circles hubs around the world. One of the Circles Coop missions was to support the establishment of Circles hubs through knowledge exchange, materials and counseling based on the experience with the Berlin pilot.

a framework for an Ambassadorship Program. The developed framework defined the goals of the program, the role as well as a series of eligibility and selection criteria and requirements for ambassadors. It furthermore identified possible support content and structures from the Circles Coop to Ambassadors, prioritized activities, outputs, and desired outcomes. Last but not least, it outlined possible measurement criteria and tools in order to evaluate and research the outcomes of the Ambassadorship program.

The main purpose of the Circles Ambassador program was to support local groups and communities to create initiatives around Circles. Circles Ambassadors were seen as passionate, engaged Circles members who would spread the word about Circles in their communities and act as advocates for the ideas and values of the project. Ambassadors were conceived as advocates and facilitators, spreading awareness, building new hubs, and fostering autonomy within the community. They would promote accessibility and inclusivity, lower participation barriers, and test Circles in diverse contexts. Their efforts would enrich data research and follow an emergent approach, emphasizing trust, relationships, and a patient, trial-and-error methodology to enhance the Circles ecosystem.

During the Berlin pilot, the Circles Coop supported two ambassador initiatives. One was present-

ed by the former subsidized partner Coop Space (now Imago Space) and consisted of a set of activation steps to deepen the understanding of and engagement with Circles amongst their members. It included identifying and fostering internal economic synergies through the use of Circles, for example, by crowdfunding from members to create a Circles community fund that could be later redistributed to reward especially engaged members and value care work. By facilitating the first positive experiences with the Circles, the goal was to form a foundation that would subsequently foster interpersonal exchange between members and to later connect and contribute to the broader community of Circles. Unfortunately, the proposal was not implemented due to internal organizational changes.

The Circles Femmia ambassador pilot was launched in September 2022. Circles Femmia describes itself as a digital basic income initiative by women for women that enables professional and personal development. The founders, Franziska Börner-Zobel and Anne Walther, started the project within a group of female entrepreneurs motivated by the personal experience of one of the founders, who went through the experience of not being able to afford self-care, coaching or further education when needed. While operating largely independently, they communicated with the Circles Coop to exchange ideas and experiences, requesting information and support.

Femmia - Ambassadorship

The Circles Coop supported the development and implementation of the ambassador pilot Circles Femmia, a digital network, marketplace, and basic income initiative for women, offering an alternative opportunity to care, grow, and connect.

Circles Femmia describes itself as a digital basic income initiative by women for women that empowers them by offering a marketplace for their talents and services. Women can showcase their abilities, share ideas, and provide services, earning Circles in return, which they can use within the Circles marketplace. Circles Femmia aims to create a virtual community that supports women economically and socially, fostering exchange, collaboration, and empowerment.

The founders, Franziska Börner-Zobel and Anne Walther, started the project with a group of female entrepreneurs. The initiative emerged from the personal experience of one of the founders who faced financial challenges while seeking self-care and professional development. While operating independently, they maintained communication with the broader Circles Coop community. The distinct branding of Circles Femmia added a feminist identity to the initiative, attracting women to join both Circles UBI and Femmia.

Circles Femmia is still a growing project managed alongside daily responsibilities. Its primary

objectives include empowering women through UBI offerings, promoting women as providers of services and business ideas, and facilitating discussions on finance, self-employment, and caregiving within a supportive network.

Circles Femmia has garnered significant interest and engagement, although onboarding women to the platform has taken time. Femmias' offerings were integrated into the Circles Marketplace, contributing to the value of Circles' native currency (CRC). The initiative is exploring various payment methods to ensure the sustainable use of Circles within the network. The "Ask me anything" feature has proven popular, and content is posted in both German and English, with English content receiving more attention. The experience showed that women expressed more interest in the English version of the platform.

Circles Femmia hosted a range of events, including presentations, exchange sessions, and internal gatherings. They are currently planning a talk series that will focus on helping women better understand their money mindset. This series will include presentations followed by opportunities for onboarding and discussions.

1.4 LEARNINGS & PERSPECTIVES

In conclusion, our UBI pilot project in Berlin has provided valuable insights and learnings in various aspects, shedding light on both successes and challenges.

From a strategic perspective, we found that subsidies can be an effective means to kickstart the local economy, with Circles in Berlin benefiting from this approach. However, challenges arise when extending financial support, and it is imperative to establish a clear phasing-out plan from the project's inception. Implementing a robust customer relationship management system is crucial to support partners throughout the process. Offering a diverse range of services that cater to both basic needs and businesses' requirements, such as tax advice, logistics, business consulting, graphic design, web services, and payroll accounting, helps maintain a healthy circular value flow within the network.

Different types of partners and onboarding strategies were observed to yield varying results. Retailers found it easier to use Circles (CRC) compared to service providers, highlighting the need to focus more on various partners. Unfortunately, CRC cannot yet cover major expenses like rent, utilities, and taxes, which remains a challenge. Therefore, it's essential to prioritise basic needs and close business-to-business loops within the partner network to ensure long-term sustainability. Onboarding business networks committed to exchanging a specific amount of CRC from the outset can enhance sustainability and support unsubsidized exchange.

Our experience emphasised the importance of defining participation timeframes from the beginning of the project to avoid an upward fundraising spiral and inject dynamism into the program and partner network. Establishing concrete milestones related to closing loops and increasing CRC expenses, along with systematic progress monitoring, could help identify what works and address challenges more effectively.

The administrative burden of the Subsidy Program posed a significant challenge, taking a toll on both businesses and our team. Better coordination with the Product and Development team for user feedback and feature development could have mitigated this issue. The Community Activation Team's focus on the subsidy program affect-

ed partner onboarding, and the stability of the wallet and transactions was a key factor in gaining partners' trust.

Understanding the technology, especially the Web of Trust (WoT), is essential for a smooth app experience and organic community growth. Accessible and diverse materials are crucial to help users grasp the app, and feature development should prioritise helping users find information, identify bottlenecks, and resolve issues. The community demonstrated a willingness to assist others in understanding the app, which is a valuable resource for growth.

In hindsight, making eligibility criteria for the subsidy program transparent and nurturing a network that includes both subsidized and non-subsidized partners might foster more collaborations and closed loops. Onboarding "minimal viable circles" and incentivizing individuals to accept CRC for their surplus could reduce risk without the need for subsidies. If subsidies are deemed necessary, tying them to a concrete business model or implementing them within a project-based framework financed by public funds or through a partnership with a foundation could provide a more sustainable approach.

Lastly, it's important to note the role of the marketplace and in-person markets/events from a Community Activation Team's perspective, as

these interactions and events play a vital role in building and sustaining the Circles community. In conclusion, the Berlin UBI pilot project has been a valuable learning experience, offering valuable insights into the potential of UBI and the challenges involved in its implementation, with a focus on the role of subsidies and the importance of community engagement and support.

In addition to the lessons learned and findings highlighted in the UBI pilot project report, we also encountered a set of significant challenges that had a notable impact on the project's trajectory. These challenges stemmed from operating in a constant emergency mode and were compounded by the limitations of our small team and the administrative work associated with the project.

- <u>Sense of Urgency and Lack of Time for Strategy Development:</u> The project often operated in an emergency mode, with limited time and resources. Our team was relatively small, and the substantial administrative workload from German bureaucracy added to our constraints. As a result, we struggled to find the time for comprehensive strategy development, hindering our ability to plan and execute more effectively.

- <u>Wallet Issues and Dependencies on Third Parties:</u> The functionality of the wallet is a critical component of the project, and often faced

difficulties. These issues were exacerbated by dependencies on third-party services, which sometimes fell outside our direct control and scope. The reliability of the wallet was crucial for the project's success, and such external dependencies posed a significant challenge.

- Adaptations of the Token Value and Technical Transitions: Recurring technical developments that sometimes occurred without adequate coordination with the coop created pressure for both the CATs team and the Berlin pilot partners.

- Working Under Pressure with No Long-Term Perspective: The constant state of emergency because of non-confirmed donations, coupled with the need to respond quickly to challenges, put the project team under significant pressure. The absence of long-term perspectives or planning created a sense of urgency in all aspects of the project, impacting the team's ability to manage tasks effectively and strategize for the future.

- Disrupted Workflows due to Lack of Financial Stability: The project went through multiple phases of uncertainties, caused by the fact that it mainly relied on one single funding source, which was provided by a private donor and regularly had to be renegotiated. Many unplanned changes disrupted our workflow

and introduced uncertainties into the project, making it difficult to maintain a clear direction and ensure continuity. This highlights the need for the project to have autonomous funding moving forward.

- <u>Community Coordination for Sustainable Funding:</u> Even though community fundraising campaigns were happening on a regular basis, the budgets coming in were relatively small compared to the Coop's actual financial needs. In addition to that, there is a need for more diverse community financing platforms outside of the already existing Web 3 spaces. A project like Circles needs far more backing from an active community that co-creates and co-maintains the infrastructure, thus actively investing into its future.

In light of these challenges, it's clear that the constant state of urgency, the lack of time and capacity for strategy development and coordination were major hurdles. Moving forward, addressing these challenges will be crucial for the success and sustainability of similar projects. This experience underscores the importance of having a well-defined strategy, adequate long term funding, and the ability to adapt to the evolving needs of the community and partners, ultimately contributing to the success of future initiatives in this space.
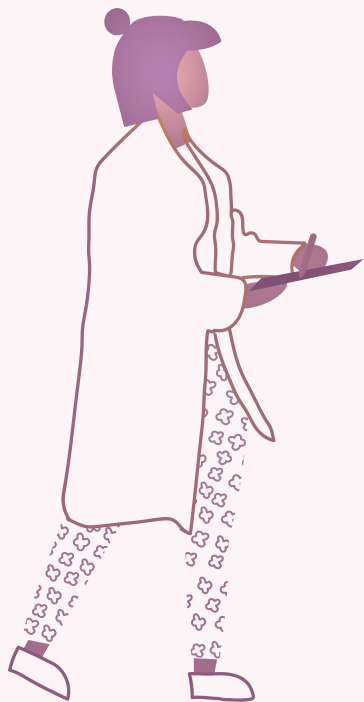
2. PRODUCT DESIGN

2.1 PRODUCT DESIGN PRINCIPLES

The story of our product design has different phases. In the first instance, this was led by Saraswathi Subbaramann, who bravely took the challenge to jump into the design of a fully new product at that time. Therefore, setting the very first foundations for the product design of all Circles. Coop activity.

Early in 2021 Lucia Trias got into the design team, and in May of that year, she took over the position of product lead for Circles Coop, which also included the Product lead of circles.garden, such a position she fulfilled until the end of October 2023.

During 2023, the design team grew as the working scope of the Circles.Coop also expanded. In 2023 Marianna Manoura and Rucha Joshi joined the Design team, as external workers for the Coop. Marianna supported the team on graphic and branding design work and was a key player in the reconstruction of joincircles.net and circles. coop. Rucha came to bring a sharpened view on UX design that complemented the product lead of Lucia for all work around circles.garden and circles.marketplace platforms.

For Lucia it was from the beginning very important to bring a decolonial design perspective, which will come to tackle many aspects of our technolo-

gy but also of our way of working. All this meant to shape our products many times, not in the easiest way, but in the way we considered the best. In this regard, it is always important as part of such a design process, to make clear that we are not doing what we "like" or what we think "looks pretty", but what we consider better regarding the results we want to achieve for the people we are working with/for.

Even when circles.garden was the main product where our UBI turned into reality and the transactions among our community could crystallize, the Product lead inside the Circles Berlin Pilot had many other satellite aspects.

The complexity of the ideas we wanted to put into practice requested tight work between CATs and Product to develop communication materials that could both support a smooth onboarding process as well as accompany the way of those engaged on Circles UBI to gain autonomy. Translating our principles into visual language was a joy, and this gave us the possibility of enabling through our graphic design pieces comprehensive explanations of the highly complex technology we developed. The nature of Circles UBI presented to us as an open space for new design languages. Coming from a decolonial position a visual identity that was not human-centred is one of the most characteristic aspects of it. For this reason, we worked arduously with Marianna Manoura on building

our two communication platforms joincircles.net and circles.coop, which were fully rebuilt by us as a Design team after gaining insight from our active community in Berlin, on which information was necessary for people to understand the Circles UBI idea and learn how to join our Berlin Pilot.

Moreover, working in a Cooperative, added a new but very interesting instance to Lucia's design process. Decisions on the development and design of our products should be discussed with the Core Team of the Circles Coop as well. What normally happens to be an experience-centered process where the end users are considered the most important source of knowledge for decision-making, should now be combined with the ideas and wishes of the Cooperative who, as a group of people committed to the cause of UBI circles, and have their own principles and ideas about how to do this work. The complexity that this added to our process may have been overwhelming at times, but after considerable practice, we were able to navigate it. Today in retrospect, the biggest challenge was to quell the craving for fast, layered-style work when the human organization we had was looking to implement forms of decision-making and work dynamics that directly confronted the agile techno-vision that dominates the crypto world.

Since Lucia started working as Product lead, she settled the principles for the design work as a

whole, seeking to do the work as a designer in a faithful way to the Circles principles of self-sustainability and decentralization, the design principles were as follows:

Inclusion

There is no product, service, or even life situation that does not exclude people. Inclusive design for Circles is a position towards understanding our exclusion process and doing it transparently. Every decision we make in product design means prioritization for us. Therefore transparency in our decision is essential to avoid frustration, both in the communities using what we do and in ourselves.

We pursue transparency with you and with ourselves, we do not seek to include everyone in our product but to break hegemonies and capitalist normality. Inclusion stands for us as a way to acknowledge differences and work towards constellations in which such differences can co-exist, all this according to our political ideals.

Feminism

A feminist design approach means to us, the acceptance of differences, and the caring of these. Care work is a central aspect of design. For making decisions we need to invest time to evaluate the situation responsibly. Designing for differences in a world ruled by universal thinking means sometimes designing ideas from scratch, and even re-

jecting the possibility of using solutions available -even when this would be the easy way. Because sometimes, all solutions available correspond to the same one-life experience, and the decision on which to implement, is only a question of technical skills but not really a question on a product level. When designing in a decolonial way, designers have to put their comfort aside, and constantly push their boundaries further.

Another central aspect is maintenance. We know that the majority of people today still have a maintenance dependency when it comes to technology. For example, every time we launch a new version of our technology, we have to give people the chance to freely migrate with us or not. Freedom can only exist in systems based on mutual care. Otherwise, the line between freedom and imposition turns blurry.

Autonomy

Give people the right to take over technology and modify it. Be transparent with all decisions we make that include any level of privacy vulnerability, and habits modifications.

Autonomy can only exist if there are no capitalist dependencies. For this, all our product and design work is Free or Open Source licensed. This means we do not claim private property on anything we create. In this regard, the creation of guidelines and detailed documentation has been an essential part of our autonomy-based design work.

2.2 CIRCLES.GARDEN AND THE BERLIN COMMUNITY

This work was made in collaboration with the Bitspossessed collective. Sharing certain essential values from both sides, made our work an enjoyable space. The commitment towards privacy, the importance of user autonomy, and the awareness that even when we have a responsibility to our community we can make mistakes were of vital importance for this extensive and fruitful collaboration.

Design for a technology that is new -and being used for the first time in such a way- demands to have a "learning by doing approach" in many mo-

ments. This, together with the great vision of providing UBI to people, was an ongoing challenge that made us feel overwhelmed from time to time. Nonetheless, the possibility of practicing an experience-centred design process, was turning the collaboration with partners and people into our biggest source of solutions. Our task as designers was then to be able to bridge the complexity of our technology, with the experience and needs of an active community in Berlin that depended on the UBI that was generated, all together as the project grew and learned itself.

In this constellation, pursuing a decolonial design approach meant a constant questioning of all things that the capitalist system takes for granted while planting seeds of new forms of development for technologies that conform only to Westernist logic. Many of these challenges can be found in the article written by Lucia some time ago. Nonetheless, it makes sense to mention one aspect of our daily work in the design and development of these two products that synthesizes our long path together.

Having to prioritize infrastructure work, and building the foundations of our product, while de-prioritizing our own design work in terms of offering new features we knew were as well important to our community, was not an easy decision. This often resulted in the feeling of a too "slow process". Nonetheless, such infra work actually ensured

a better use of our product, with very tangible changes - in fact, our community appreciated our infrastructure updates when they stopped facing problems doing transactions, when trust connections worked smoothly, etc.

While this may have led in moments to possible invisibility of what is classically considered design work, we know that having led the product development in a way of giving the necessary importance to infrastructure maintenance and development, was crucial for a project like the Circles Berlin pilot. In a nutshell, we are happy to have focused on the stabilization of the infrastructure and technology we have been designing, up to the current point where we were able to overcome most of the recurring bugs and offer a level of stable functionality that allows us to know that our product is able to work properly. Hence, gifting to all those who are committed to be an active part of this idea to self-generate UBI among themselves, with the platform to make this idea come true.

Slowing down is an essential part of alternative ideas to capitalism, and we had to learn it as well as designers. Unlearning anxiety, practicing consensus, struggling for our work to be made visible, and never forgetting that making our work a free domain, is not a mere matter of licensing but of facilitating access to it, were the core of our design work.

A big part of the work done as an open-source design project was to build guidelines and libraries of open design materials. Making them available to anyone who wanted to use them for another instance of Circles, as well as for any other project that might arise, is a responsibility we took very seriously. This work was a joint work made by Rucha, Marianna, and Lucia. This showed us internally as a team, the importance of coupling the design work with different positions that can contribute the necessary visions for the construction of a complete design toolkit. Therefore offering today, all the necessary things for future designs. From the theoretical principles to the branding guidelines as well as a detailed asset library where every element of our circles.garden wallet can be found.

In this same line, having complete design documentation of the final state of our product at the date this design team ceases its activity is part of the care work that as designers we did. Knowing that in a free or open source project, no one should be essential.

List of guidelines and design resources:

Design guidelines: Here you can find the basis for our work, conceptually and practically speaking.

Circles.coop design files: These are the design files for the construction of the circles.coop webpage.

Circles.Coop branding guidelines: Here are the foundation for the construction of the visual identity of circles.coop, as well as basic guidelines for logo applications & colour pallet.

Joincircles.net design files: These are the design files for the construction of the joincircles.net webpage.

Circles.garden design: These are the design files for the construction of the Oct 2023 state of circles.garden wallet.

Design assets of Circles.garden: The assets & components (e.g. buttons, input components, font style, color pallet) that are used in the design of circles.garden.

Circles.market design: These are the design files for the construction of the Oct 2023 state of https://market.joincircles.net

Entropy these are the design files for the construction of the Oct 2023 state of https://entropy.circles.coop/
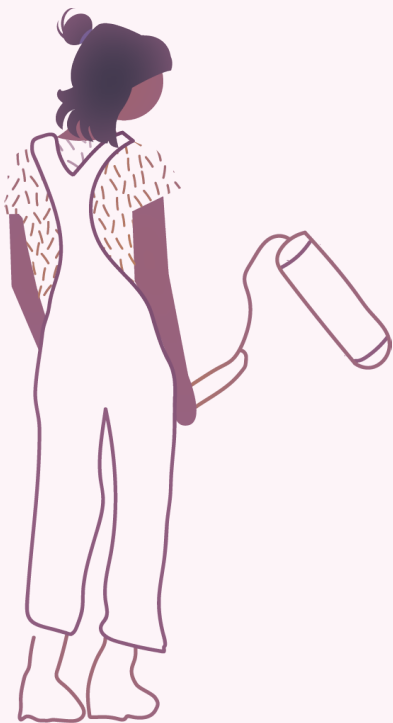
3. TECHNICAL DEVELOPMENT

This section is devoted to the technical aspects of implementing, developing and maintaining the circles.garden wallet application which is what has allowed for the Berlin Pilot to happen and for people and businesses to try out Circles in practice.

3.1 THE BITSPOSSESSED COLLECTIVE

The software development has mainly been carried out by the bitspossessed Collective but with the occasional help and contributions from external collaborators. The bitspossessed freelancer collective was formed in January 2021 with the following mission:

"bitspossessed provides a healthy, supportive space for our members to build software cooperatively. We strive to contribute to a more just and equitable tech industry, a sustainable digital commons, and an ecologically regenerative future that prioritizes care and social responsibility."

Bitspossessed was formed to self-organize software development for projects like Circles. The ideology and narrative of the Berlin Pilot are aligned with the values of bitspossessed and the collective is proud and grateful for the opportunity to contribute to this project.

It has always been important for the team of developers working on Circles to have integrity around

privacy, reliability, and user rights. The bitspossessed collective wants to encourage decentralization of power, decolonization, and increased economic equality. During the time working with Circles, the members have done their best to uphold their values, advocating against injustices and safeguarding users against potential threats.

In the following sections, we cover the achievements and challenges of the technical work with the circles.garden and the Berlin Pilot, from the perspective of the bitspossessed members.

3.2 TIMELINE FOR CIRCLES.GARDEN

In this timeline we have summarised the major events for circles.garden, such as feature launches, achievements, and important changes affecting the circles.garden wallet application.

October 2020

- The **Launch** of circles.garden.
- A lot of bug fixing and service improvements were followed to deal with scaling.

January 2021

- Formation of development collective **bitspossessed** which took over maintenance of the application as an external entity from the Circles Cooperative.

Spring 2021

- Dealing with **scaling** problems of the initial MVP (minimum viable product) app as more users started using it.
- Improving **technical documentation** to maintain CirclesUBI as an open-source project, including the launch of the Circles Handbook

July 2021

- Launching **shared wallets** where several users can share access to the same wallet, primarily intended for businesses.

Spring 2022

- Replacement of **The Graph** hosted service to a **self-hosted** Graph Node version, as the hosted service had major problems with providing up-to-date information. The service indexes all sign-ups, transactions, UBI payouts, and trust interactions.

June 2022

- Switch to **Time Circles** which is a conversion unit of circles that includes a demurrage rate. Read more here.
- Launch of major user interface and **design updates** relating to account creation and onboarding, menus, and more.

October 2022

- **Edit profile** functionality allows users to change their username, avatar, and email.
- **Transfer retries** were added when transactions failed, triggering re-indexing data relating to the specific account. This improved the transfer success rate.

December 2022

- Compatibility with the **latest Safe version** (v1.3.0) and automatic upgrade for signed-in wallets (v1.3.0+L2).

February 2023

- Launch of major **user interface** improvements. Changes included the replacement of icons and illustrations, improved buttons, new input components plus re-designed and more accurate notifications.

April 2023

- Integration of a **new pathfinder2 service** with drastic improvements in speed and success of circles transactions.
- Increase the default trust limit to 100% to improve the transferability of circles.

May 2023

- The possibility to **export a circles statement** of historical circles transactions, including balance changes due to demurrage.

June 2023

- New **typography** for circles.garden.

July 2023

- **Filtering** between incoming or outgoing **transactions** in the activity log, which allows for a better transaction overview.

August 2023

- A **shared activity log** between users, available when visiting their profile.

September 2023

- **A News log** was launched where users can get updates about the wallet application itself and other important information about using circles alongside their regular activity log.

October 2023

- **Balance breakdown** allows users to see what circles tokens they hold.
- **Mutually trusted** peers in the profile of other accounts allow you to see who you both trust.
- The number of mutually trusted peers is also consistently available in mini profiles in search.
- These features help users understand where their circles can be most easily used and what trust connections are important for them in using their circles.

Additionally, numerous minor enhancements have been implemented within the app. Over the years substantial work has gone into **bug fixing**, keeping **external dependencies** up to date, and managing the use of external services. Regarding the underlying technical infrastructure, it has been upgraded and escalated to serve the users of the application satisfactorily. A separate development setup of the application infrastructure has also been maintained and improved for software testing (known as a "staging environment").

For the complete release history of circles garden we refer to: https://github.com/CirclesUBI/circles-myxogastria/releases

Here, you can watch a video of bitspossessed explaining Circles.

3.3 CHALLENGES

Data Synchronization

Blockchain technology has its pros and cons. It opens up interesting opportunities, such as keeping track of financial transactions in a transparent and decentralized fashion. However, it comes with other challenges. One of them is data synchronization.

Since blockchain is essentially a distributed ledger for storing information, a log of information is stored and synchronized in many different

places. The distributive nature means that there needs to be a consensus on what information is added. Therefore the data addition is not instant. The user interface of applications using blockchain then has to consider and mirror the delays involved in a user-friendly way.

The way data is stored on blockchains, in a very extensive log with blocks of information also makes it harder to easily extract the information that is needed by the users of an application - like who trusts who or the total balance you hold. For this purpose, blockchain indexing services exist. An indexer extracts data from the blockchain, processes it, and stores it in a useful format that can easily be queried by an application. An example of such an indexer is [Graph Node](#) (developed by *The Graph*) which has been used by circles.garden. Since there are constantly new events in the blockchain these have to be continuously updated.

Because of how Circles is designed, paths to send circles need to be found for Circles applications to work as intended. In the section below, we discuss the challenges of pathfinding specifically. Regardless of how pathfinding is done though, the pathfinder service or algorithm requires indexed blockchain data about the state of the user network or web of trust.

We can see a chain of dependencies building up:

Application -> (Pathfinder) -> Indexer -> Blockchain

All these parts require time to synchronize information. The pathfinder takes time to calculate paths. The indexer requires time to process, store, and send data when queried. The blockchain needs time to find consensus on adding new blocks of data. Once the information reaches the user in the web application it might already be out of date because of these delays.

This problem is inevitable with decentralized data storage solutions like blockchain. It can only be mitigated by minimizing delays and improving service performance.

Scaling

The problems described in the section above become bigger as the number of users and transactions increases. As more data needs to be synched in a larger web of trust, the likelihood of delays of relevant information increases. Pathfinding becomes more complex and the indexer needs to handle more data faster.

Mitigating these growth problems and handling the inevitable problems of data delays, such as failed transactions, in a user-friendly way has been central to our efforts of improving circles. garden. Here we list a few of our efforts:

- Self-hosting the Graph Node indexer service to improve performance and reliability
- Using another indexer than Graph Node built into a new self-hosted pathfinder service
- Under the hood retries of failed transactions in case it was a result of inaccurate data due to delays
- Better user notifications for failed transactions
- Displaying information banners to users while they await account deployment and indicating loading for pending transactions.

Another major bottleneck is the relayer service that has been used in circles.garden. To register a transaction on a blockchain, fees usually have to be paid. These are referred to as gas fees and on the *GnosisChain* Blockchain that is used for circles.

garden, these fees need to be paid in the currency of xDai. To avoid that all Circles users need to hold xDai (besides their Circles) the relayer has been used as a service to pay for all the transactions of users in exchange for a small amount of CRC. Thus only the relayer needs to hold xDai. However, this creates a bottleneck and prevents scaling. A different approach has been considered and discussed: to provide all Circles users with a small amount of xDai to pay their transactions directly. However, it has not been adopted since it comes with a different set of pros and cons.

Third party services and dependencies

The relayer service that we just mentioned is an example of our external dependencies. This particular service quickly became a problem after the launch in 2020 as maintenance of the _safe relay service_ was discontinued. Any updates needed for circles-garden had to be done by the bitspossessed developers in a [forked instance of the safe relayer codebase](). Major work has been put into switching to a new relayer known as _Gelato_. At the time of writing, most of the work of switching to _Gelato_ was done but not put into production yet as it would require major testing and quality assurance before doing so.

When it comes to indexers, the Graph Node was initially used as a hosted service provided by The Graph organization itself. In early 2021 this in-

dexer became heavily unreliable which we solved by self-hosting our own instance. Until our own service was up, however, this caused major problems and essentially downtime for circles.garden. During this period, many users were lost and the expansion of the Berlin Pilot slowed down. Time was also taken away from new feature development.

The web application of circles.garden is written in node.js and React. Like any similar application, it has many external code dependencies which need to be continuously upgraded.

Finally, the system architecture of circles.garden also relies on some third-party service providers such as QuickNode, which provides a blockchain API to access the blockchain infrastructure maintained by them. While these providers help with security, scalability, and reliability, they can also have performance issues and unplanned outages for example, that affect our system. Thus having backup infrastructure like running our own Ethereum RPC nodes is essential.

Pathfinding within the Circles web of trust

Circles transfers allow transitive transactions, which are a sequence of simple transaction steps between different users and using different CRC tokens along the Web of Trust, always satisfying

the trust limits and balance restrictions, and aiming to maximise the flow of CRC between any pair of users.

The rules of how Circles can be used and transferred and the implications of trust are defined in *smart contracts,* which are small programs stored on the blockchain. In the Circles smart contracts there is a *Hub.transfer()* method that validates a given Circles transactions path. However, it does not itself provide the transitive transaction path between users necessary to perform a Circles transitive transfer. Thus, an external service is needed and we call it pathfinder because it explores the Web of Trust looking for a valid transfer path that satisfies a request provided by a Circles user.

The steps of this path are currently calculated with the max-flow algorithm, which gives a complete solution to the problem and the complexity grows with the infinite growth of the trust network. This is manifested in delays when providing a response to the user. In order to reduce these delays we have improved different parts of the system by:

- Migrating from maintaining the capacity graph (the computed graph resulting from applying the balance and trust limits to the original Web of Trust) in an external service (the circles API worker) and letting the pathfinder service calculate this capacity graph in memory and in a more efficient way.

- Continuously updating the circles.garden services to ensure compatibility with the path-finder service upgrades. Also integrating the pathfinder2 service: a re-implementation of the original pathfinder in Rust, by @chriseth.
- Leveraging the pathfinder functionality in which the pathfinder can be asked to find a path exploring only part of the capacity graph. Specifically, the pathfinder would explore the graph only one *hop* further from the origin user node of the requested transfer, and iteratively explore further the network by increasing the *hops* limit until a valid path is found.

Another important challenge of the pathfinder is working with a complete version of the capacity graph. Calculating and exploring a more complex graph affects computing time, thus in the current implementation some edges of the graph are ignored, limiting the flow of the entire network.
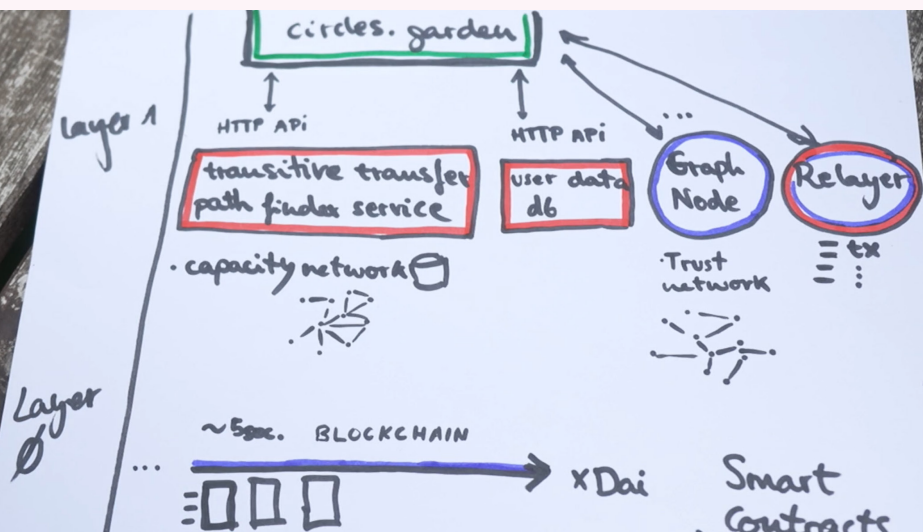
Trust limits, which are a feature of the smart contracts limiting how much Circles can be accepted through transitive transactions, is another challenge. They make the pathfinding problem significantly harder than it would need to be. More in-depth information on such topics can be found on the Circles forum.

Finally, as stated previously, having up-to-date data is critical for the pathfinder service, since a change in one trust relation or a balance quantity might affect many other parts of the network.

Governance, structures, and resources

CirclesUBI is officially an Open Source project. There have been several initiatives and functional Circles wallets besides circles.garden (such as circles.land and circles.pink and most recently Circles Bali). Up until recently circles.garden was the most used wallet.

For a long time within the development of circles.garden, there was constant changing of priorities and directions, which left a lot of initialized work unfinished and resulted in wasted time. Management has been unclear and informal power structures have governed in practice. Financial insecurity of the project also caused a lot of unnecessary stress and poor conditions for effectively planning the work ahead. Problems with communication and coordination and unclear agreements have

obstructed the development work substantially over the years. It is the reality for many open source projects and organizations trying to democratize technology while dealing with inherent power structures in society.

Working on an open-source project has its inherent challenges too. For one there is the asymmetry of having paid and unpaid contributors. The system itself is also very complex and it has thus been hard for externals to easily understand or contribute to our codebases. Being an Open Source project requires transparency and significant efforts into documentation and developer guides. Such documentation also enables others to review our codebase and it is essential for maintaining an open and inclusive dialog about the system with anyone who is interested. This work has often not been prioritized enough. The heaviest burden of documentation has also been on the developers of circles.garden as it was for a long time the first working platform with an active community.

3.4 LEARNINGS AND CONCLUSIONS

Despite the challenges and changing nature of working on this project, a lot has been achieved by only a few developers. The team from bitspossessed has on average consisted of around four part-time engineers dedicated to providing the best user experience possible. We are proud of what we have provided. We do however want to acknowledge that a lot of features were delayed and launched only in the last year. Regrettably, these features were not made available earlier. We see the reasons for this to largely be due to shortcomings in management, lack of a transparent organizational structure, and poor planning.

The way Circles was launched back in 2020 was unideal. It was in many ways a mere Minimum Viable Product (MVP) which was mal-adapted to scaling into wide adaptation and use. Some major design mistakes were also made in hasty last-minute decisions to finalize the smart contracts and core functionality before the launch. These decisions relate to e.g. *trust limits* and the use of a *relay service* (see above). It was incredibly stressful for the two developers working at the time and the experience was the major reason for the formation of the bitspossessed collective. Since then, the technical debt built up from the initial proof of concept has been the main source of work for the developer team, preventing the release of new features. It would have been wiser to scale up in

a slow manner with proper testing in simulated environments with smaller networks first and to also do network simulations to better understand the shortcomings of the system design and smart contracts before they got locked in. The Circles Bali project which launched this year was successful in this regard. On the other hand, they had the resources and time to do it properly. We also hope that the experiences and learnings of the Berlin Pilot documented in this report can benefit them and other Circles projects further.

It should also be said that in many ways the technical challenges are also part of the reasons why Circles has been so interesting and fun to work on. Despite the stress and precarity of the work, it has been rewarding in many ways.

3.5 CIRCLES IN NUMBERS

Here are the concrete numbers and statistics about the number of users and the usage of Circles and the circles.garden wallet.

The data presented below is extracted from The Graph and the circles.garden relayer as of October 2023. The initial two lines of data encompass projects external to circles.garden and Coop. Subsequent data pertains specifically to circles. garden.

(1) Total number of Circles individual wallets: 213371

(2) Total number of Circles shared wallets: 2925

(3) Number of individual wallets created and validated (deployed) through circles.garden: 120209

(4) Number of shared wallets created (deployed) through circles.garden: 901

(5) Out of the circles.garden deployed individual wallets (3) 3693 are active (*)

(6) Out of the circles.garden deployed shared wallets (4) 119 are active (*)

(*) The active accounts are the ones that have performed a transaction (sign up, transfer of circles, trust, or SW owners removal/addition) in the last 3 months

(1) and (2) statistics come from The Graph,

(3), (4), (5) and (6) come from our relay service

4. MARKETPLACE

Coming from the principles of the Circles Product Design, the technical development of the Circles Protocol and the activities around the Community Activation and the Berlin Pilot, which were described above and laid the foundation for yet another Circles product, we now want to dive into the Circles Marketplace experience.

The Circles Marketplace is an integral part of the Circles Cooperative's vision, designed to facilitate continuous exchanges between buyers and sellers, resulting in CRC transactions. In this chapter, Andreas Arnold (Circles Marketplace Coordinator, Member of the Circles Strategy Group, and part of the Circles chapter in Berlin since mid-2020) takes us on a short journey through the development of the marketplace, its strategies, and the unique features that set it apart.

4.1 THE CIRCLES MARKETPLACE'S INCEPTION

Due to Circles' decentralized nature there have already been community activities facilitating the exchange of products and services priced in CRC. Before the cooperative's attempts, Circles community's own Emin Durak already programmed a simple marketplace website. Later a team from Munich started promising affords in building a marketplace integrated into their own wallet version, though developing a closed shop system rather than a matchmaking platform. Therefore, in the second half of 2021, the Circles Coopera-

tive focused on strategizing and developing a Minimum Viable Product (MVP) for the marketplace. Together with [FDO Solutions](), a pioneering partner from the digital, cooperative economy in Berlin, its founder Felix Weth, and lead developer Henrik Heßlau, our soft launch could be initiated in early 2022 to collect valuable feedback from the community, allowing for the marketplace's continuous improvement. The vision extended beyond just business transactions; it aimed to instill circular values into the marketplace, promoting sustainability and reducing excessive consumption.

Navigating the Chicken and Egg Problem

Like many platforms, our marketplace faced the classic chicken-and-egg problem. It needed both buyers and sellers to thrive, and this dilemma presented a challenge. Fortunately, CirclesUBI and the Berlin Pilot had already attracted a strong user base, predominantly comprised of UBI receivers. The focus shifted towards onboarding businesses and peer producers, enticing them to offer products priced in CRC.

Complementary Strategies

The cooperative's strategy emphasized the role of local markets in advertising products and services. This alignment with businesses through subsidy and ambassador programs laid the foundation for the marketplace's business strategy. The Circles Marketplace aimed to streamline interactions and create more opportunities for both sellers and buyers to earn CRC.

4.2 KEY FEATURES OF THE CIRCLES MARKETPLACE

The marketplace offered a user-friendly experience, including features like browsing through various product categories, adding articles to a cart for streamlined purchases, and checking out seller profiles. The cart function was designed to ensure that buyers' trust networks allowed for the required payment.

Fostering Trust in the Web of Trust (WoT)

One distinctive feature of the Circles Marketplace was its emphasis on the web of trust. Since not all individual CRC can be spent everywhere, the marketplace's cart function calculated transitive transaction paths to verify a buyer's spending capability

based on trust connections. This unique approach not only matched supply and demand but also reinforced the community's decision-making power over its economy.

A Promise Chain

Transactions within the Circles Marketplace were more than mere exchanges; they represented a chain of promises. The community's involvement in trust connections and the use of CRC reflected the true essence of money as a promise. The marketplace aimed to facilitate interactions that were not only secure but also empowered the community to regain control over its economic decisions.

Future Marketplace Features

The future of the marketplace held exciting possibilities, such as user ratings for sellers and products, enhanced transaction management for businesses, improved accounting and tax handling protocols, community maps for cooperative businesses, and an expanded search and filter functionality.

The Circles Marketplace's journey was a testament to the power of community-driven, decentralized economies. It not only aimed to bring together buyers and sellers but also to redefine

the meaning of money in a collaborative, community-centered way. As the marketplace continued to evolve, it promised to play an essential role in the Circles ecosystem, serving as a beacon of trust and sustainability for its users.

4.3 EVOLUTION OF THE CIRCLES MARKETPLACE AND NEW DIRECTIONS

Over its 1.5 years of active usage, the Circles Marketplace has brought together a diverse community of users, both private (608) and business (263), resulting in the sale of numerous articles (2271) and units (3685) as of October 2023. These experiences have led to valuable business insights and learnings. The focus has been on closing economic loops, particularly in terms of offering complementary products and services, which businesses need for their value creation. To enhance economic efficiency and incentivize CRC-based transactions the supply of labor via the marketplace could have been a critical next step.

Also, for a future pivot, one notable shift could be the move away from subsidies, with certain partners already offering CRC vouchers, ensuring continuity while enhancing the Circles network. The importance of eliminating the market's reliance on validating products and services with fiat money (e.g. EUR) has also been recognized, but in the short term copayment features are very much

appreciated by marketplace participants.

Looking ahead, the development of the Circles Marketplace could take on new dimensions, including its potential as an accounting tool, a community-building tool, wallet-focused strategies, and the exploration of new generations of marketplaces, such as knowledge-graph-based marketplaces (e.g. within Taiga stack by Anoma). These evolving directions promise to shape the future of Circles in innovative and exciting ways.

5. RESEARCH

5.1 FRIBIS NETFI TEAM

Context

The FRIBIS NetFi Research Team was one of the first research teams in the Freiburg Institute For Basic Income Studies (FRIBIS). Research teams in FRIBIS need to be made up of 50% activists and 50% researchers. The idea of a research team in FRIBIS was originally launched in the context of Community Currency in Action (CCA) by Julio Linares (Circles Coop) and Gustav Friis. Originally the team was made by Julio Linares, Teodoro Criscione, Valentin Seehausen, Gustav Friis, Aleeza Howitt, Blanka Vay, and the supervision of Prof. Janos Kertesz. After Valentin Seehausen handed over the coordination to Teodoro Criscione, the team was expanded to include Sowelu Avanzo, Alessandro Longo, and Giulio Quarta. The scope and the methods of the research team remained unchanged.

Scope

Provide research methods to study alternative economic and monetary systems. Research methods that do not rely on pre-existing theoretical models to be applied. In particular, the research group is focused on the use of network analytical and ethnographic tools. Since we are working on novel economic systems (UBI), we set out to create the foundation for a new way to study socio-economic phenomena, based on the flow of money in complementary currency systems.

Objective

The study of the usage of community and complementary currency systems to build alternative economic circuits.

Methods

The methods are currently focused on three main strains: network analysis (quantitative analysis), financial diaries (mixed methods), and survey analysis / structured interviews (qualitative analysis). In particular, we try to forge a hybrid and open methodology to effectively study open experiments such as Circles. These methods use as few assumptions as possible and we based our analysis on a critical realist framework.

About the network analytical tools (Mattsson et al., 2023), the adopted methods are currently the following:

1. Topological network analysis of currency flow - i.e., centrality measures for power and influence
2. Flow analysis - i.e., InfoMap for community detection, PageRank centrality measure for currency distribution
3. Cycle analysis - i.e., static and temporal analysis of cycle motifs to assess re-circulation in payment systems

On qualitative and mixed methods:

1. Survey analysis and semi-structured inter-
   views
2. Ethnographic methods - i.e., participative
   observation
3. Adapted Financial Diaries - i.e., qualitative
   and quantitative flow analysis. We adopted
   a repurposed version of the financial dia-
   ries, drawing inspiration for the interviews
   and then the presentation of the results as
   personal profiles.

5.2 REFLECTION ON THE BERLIN PILOT

The social organization of what became the Cir-
clesUBI pilot in Berlin began sometime in 2019.
The Circles protocol was launched by members of
what became the Circles Cooperative in October
2020. The first outburst of the attention attracted
hundreds of people who thought they would get a
token that they could sell as their "basic income".
To their surprise, after joining the trust network
they realized these tokens were valueless, and
that they were the issuers of their own tokenized
promises, only exchangeable for stuff of value that
they themselves give, and that each of them was
unique, for which reason is hard to create a mar-
ket for each personal currency. Many were disap-
pointed and many also understood that against
the grain of what became known as "cryptocur-
rencies", the Circles tokens represent promises.

This chaotic "commodity" versus "credit" money has always been at the heart of CirclesUBI as a protocol, and its evolution as a plural economic system will largely depend on the shape of this non-duality (Cabaña & Linares, 2022).

After the Circles Cooperative was founded in early 2021, the redemption program began in July 2021 with the first people producing food and drinks receiving a euro cashback for the Circles units that they accepted from their customers. These people were recipients of the food and beverages produced by these autonomous merchants, who received these foods because they were issuers of CRC.

The so-called "bootstrapping" of a basic income through the introduction of a currency network, where people are the direct issuers of the units, thereby started initially on a pure p2p basis from October 2020 to July 2021. At this time, people were giving things they had an excess of, things they could otherwise not sell or give away. It was only until euros were introduced that the system started getting more economic stimuli. After all, if the currency does not reduce costs to the business, they have no incentive other than solidarity, to give their production into the network. With the redemption or "subsidy" program, businesses suddenly had the clear incentive of accepting CRC, with the promise of future euros. There were a few interesting processes worth noting here, with

regard to community involvement. At first, some of the autonomous producers did a crowdfunding campaign in Circles, which allowed people who otherwise couldn't release their CRC to spend it and give it to them, knowing that they would help the businesses buy the means of production through the euro promise. This is how one of the businesses started to produce its own beer, and another could grow its production system.

Later on, as more businesses started joining, there was a semi-standardization of the process of on-boarding, where different businesses and shops joined to give their already existing production or their own physical labor in exchange for CRC, with the promise of future euros. This redemption system of Circles into Euros allowed to demonstrate a bottom-up people-powered version of what Keynes would call "government spending". Instead of the government spending money in the military to boost economic growth, here, it is

the people that, through the act of spending Circles, create economies that benefit them. While a powerful mechanism, this effect dominated the network for the remaining two years of the CirclesUBI pilot in Berlin.
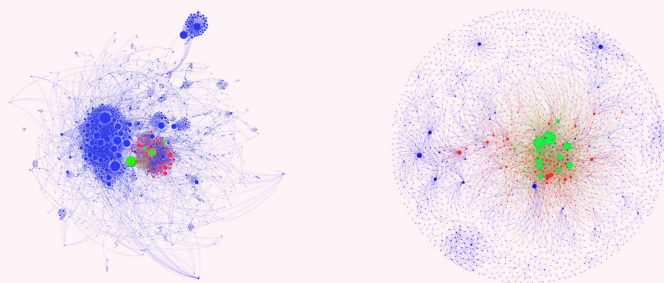
Above we can see the evolution of the centrality within the network. (Source: Avanzo et al., 2023) At first, on the left, we see the moment of virality after first launching the protocol, with people represented by the blue clusters, and a small network in green and red which represent the Berlin business network and basic income recipients. On the right, we see a picture of January 2022, with a hierarchical economic structure emerging as a consequence of the subsidy program. The Circles Cooperative and the business network are in the center in green and in red are the basic income recipients who spent money with the business network. Interestingly there is a wide p2p network of individuals using Circles who do not engage with the subsidised businesses. The non-subsidy part of the pilot is very interesting because it shows us that people are self-organizing exchanges without the need for external stimuli.

Below we see the general statistics on the aggregated graphs: each graph results from the split between the period before and after the Split-date shown. The resulting causal fidelity provides information on the accuracy of the static representations. The number of trade connections results from the aggregation of the transactions in each period. The last rows indicate the number of weakly and strongly connected components respectively. (Source: Avanzo et al., 2023)

Network	*Berlin Pilot*		*Trade Partners*		*Subsidized Businesses*	
Causal Fidelity	0.13		0.57		0.72	
Split-date	10/01/2022		02/06/2022		14/06/2022	
Time	First period	Second period	First period	Second period	First period	Second period
N. of Users	3,977	1,991	390	514	15	18
N. of Trade Partnerships	8,879	4,262	842	1,298	38	55
Volume of Transactions	652,988.5	1,647,143	260,491.1	890,483	84,778.8	285,506
N. of Transactions	19,066	11,969	2,343	3,650	329	385
N. of WCC	31	95	1	1	1	1
N. of SCC	2,935	1,528	338	462	6	6

Now, the downside of course of a euro subsidy system, without a clear revenue to create those euros, tied the Circles Cooperative into a dependency chain between external donors and the local business network. A way to counteract and balance this dynamic would have been to introduce a revenue system that accrues income or cash flows in euros coming from assets or debts. For example, a non-interest lending model for the business partners, where they receive euros upfront, with the promise to pay it back fully in Euros, or less if they accept Circles, was one of the mechanisms we thought of to address the centralizing dependency effects of the subsidy model, which ultimately led to the liquidation of

the Circles Cooperative. Having the ability to bring in euros to sustain this experimental operation, both technically and economically, surmounted a potential imbalance of payments problem. To fulfill our obligations, we decided to stop the subsidy program, the pilot, and the cooperative and instead reflect on the insights gained, to try anew later on in a new form.

In terms of the qualitative research findings, here we would like to highlight and share the experience of some of the community members who participated in the CirclesUBI pilot program. We are inspired by a method of financial diaries, developed by Steward Rutherford in Bangladesh, whereby people write down their money inflows and outflows every day and a story of the structure and patterns of their lives emerges. For the CirclesUBI pilot, since the digital database of everyone's transactions is on the blockchain, we can

search and zoom into some of the people who participated in the pilot, and extrapolate the information about their transactions together with the semi-structured interviews, to have a more comprehensive understanding of their experience. These are the adapted "diaries" which we use to analyze the use of Circles.

Circles and Unemployment

Maria (name is fictional, interview #24) is a 28-year-old Italian woman hailing from a middle-class family in the Venice area. She has been living in Berlin intermittently since 2017, juggling work and pursuing her Master's degree. Her introduction to Circles came in the spring of 2022 through a friend's recommendation, and she was immediately drawn to the project's concept—a UBI issued through an innovative technology she had heard about. Being well-educated and politically engaged, Maria quickly grasped the potential of Circles and became an active member of the Berlin community, frequently participating in the monthly market and sharing her ideas in the subsequent Assembly.

During her first year in Circles, Maria worked part-time as a Marketing Manager in a German fitness company, earning a middle-class salary. However, she felt her purchasing power diminish compared to her life in Italy, especially as the Russian-Ukrainian War triggered inflation in Germany. Maria found that participating in Circles helped

her adjust her needs to the rising prices, enabling access to products that were too expensive in euros. This gradual shift in consumption habits led her away from big supermarkets toward a local and more sustainable economic circuit.

A significant shift occurred in Maria's Circles experience when she resigned from her corporate job in May 2023 and started receiving Bürgergeld (formerly known as Arbeitslosengeld II), Germany's unemployment payment for adult job seekers (€502 per month plus rent expenses). From this point, Maria began focusing her expenses in CRC primarily on groceries, buying handmade products less frequently than before. During this period of greater need, Maria felt that the Circles UBI program played a crucial role in maintaining her quality of life.

"I feel like being part of something that is taking care of me. Someone that's not my parents or myself, but a third actor that's helping and taking care. Ensure me that also in difficult times I had something good to eat and I could afford quality products."

Simultaneously, her unemployment condition provided more free time, prompting Maria to give back to the Circles community. She began assisting a local shop involved in Circles, SICA Upcycling Design, with communication and social media management tasks—an ongoing collaboration at the time of writing (December 2023). Initially,

Maria and the business agreed to compensate for this work in CRC. Both sides were interested in making this arrangement happen in Circles' alternative economic circuit. However, a mixture of bureaucratic problems and the unexpected closure of Circles stalled the deal, and Maria's work remained voluntary. Lastly, Maria highlighted how her experience in Circles sparked a greater interest in UBI programs, showcasing that they do not incentivize laziness but rather active engagement.

This case of Maria reveals three key takeaways. Firstly, it serves as evidence of how Circles UBI effectively supported an unemployed person in maintaining a good quality of life during economically unstable times. This is demonstrated by the shift in expenses after Maria became unemployed, with a focus on essential needs, particularly groceries. Secondly, in Mari.'s case, Circles successfully transformed the standard relationship with major food distributors in a big city, encouraging a shift toward a local and sustainable economy. Finally, Maria's active engagement in the Circles community underscores the fundamental, community-centered nature of Circles; the subject became activated in the community as soon her life conditions changed, giving Circles more relevance in her life and providing her the necessary free time to participate.

Casual Users in Circles

Among the interviewed participants, we identified an emerging category of Circles' participants: what we may define as "casual users". These three profiles - interviews #8, #20, and #21 - are characterized by a steady expenditure of CRC but little or no involvement in the community. Namely, two of them never participated in the Assembly and one didn't join any events. Moreover, none of these profiles ever thought to contribute actively to the community. Yet, they expressed appreciation and gratitude for their participation in the program and noted how Circles unlocked access to a new category of products for them. Also, they all expressed interest and appreciation of the community aspect of Circles. Therefore, these participants are aware of the value of the community for Circles. Yet, they behave as pure "recipients" of an income program without concern for the fate of the community that allowed this program to exist.

This fact can be read as evidence of the difficulty of changing the imagery related to this type of economic initiative. When we decouple UBI from the state, certain assumptions regarding participation in an economic system are challenged. It was not easy for all Circles participants to grasp how a contribution to the community was a contribution to UBI's system. This underscores the extent to which the conceptualization of UBI is closely intertwined with the notion of the State.

The difficulty for some Circles participants to fully comprehend the connection between their contribution to the community and the functioning of the UBI system is indicative of the entrenched imagery surrounding such economic assistance models. The existence of a subsidy program for active stores inadvertently downplayed the perceived importance of individual contributions, fostering a mindset that leaned towards the notion that as long as the subsidy program and the cooperative persisted, Circles UBI would endure. From this perspective, the Circles Coop and its monetary decisions interpret a similar role to what the State usually does in such contexts.

Moreover, the temporal dimension played a significant role. Understanding the nuances of a Circles system required time, and participants with lower engagement levels typically joined the platform between six months and a year before the fall of 2023. The unexpected cessation of the project in Berlin further curtailed opportunities for users to become actively involved in the community. This temporal aspect, combined with the abrupt shutdown, added layers of complexity to users' engagement and comprehension of the Circles UBI experiment. Various factors contributed to the existence of this category of participants within Circles. It is crucial to acknowledge that, as the Berlin local pilot evolved, these "casual users" played a significant role.

The Case of SICA Upcycling Design

S.S. is a 39-year-old Brazilian-Italian woman living in Berlin. She has a social business named SICA Upcycling Design which designs and produces upcycled fashion items. Founded in 2006 in Curitiba, Brazil, in 2013 SICA expanded into Berlin with the line 'Proudly made in Bangladesh'. SICA made in Bangladesh outsources textile clipping waste from Bangladesh's ready-made garment industry (RMG) and brings them into the hands of the skilled craftswomen in rural Rangpur, Northern Bangladesh. Then, SICCA sells products in Berlin and worldwide through the website.

SICA's relationship with Circles began through another local Berlin shop, Herbie Unverpackt, Their story is an example of how a synergy between businesses has been partially translated from the real economy to the tokenized economy of Circles. In the early months of 2022, Herbie Unverpackt, a member of the network since 2021, started selling SICA's products in the store, accepting submissions for them. Herbie was purchasing SICA's products in EUR and selling them both in EUR and CRC with good success. For this reason, in the fall of '22, SICA decided to actively join the Circles community and sell its products directly in the marketplace. Around the same time, Herbie Unverpackt exited the subsidy program and withdrew from the Circles network due to the unsustainability of the business, preventing this synergy from surviving within Circles. The idea of

establishing network economic linkages between Circles members has been a key strategic point of the Circles cooperative. While the linkage between Herbie and SICA stopped prematurely, we will examine a more successful linkage below.

SICA's story in Circles is also insightful for another reason: it was an active part of the Circles network for three months before subsequently joining the subsidy program, unlike most of the businesses involved, who have been in the subsidy program since the beginning of their Circles experience. In the short term, the business sustained itself without resorting to the option of exchanging the CRC token into EUR, through the subsidy.

Finally, SICA also revealed the hurdles that it encountered during its period in the network while attempting to integrate Circles into its business model. A key issue revealed in the interview was the limited availability of desired services for fostering SICA's business activities within the Circles marketplace, hindering the business's ability to effectively utilize the cryptocurrency. SICA was looking for marketing, graphic design, and video editing skills on the market and it struggled to find it. This mismatch resulted in the accumulation of CRC without sufficient opportunities for expenditure. Moreover, SICA's owner found little or no time to explore the network's offer, even more so considering the abrupt project's shutdown.

Economic Collaborations

As stated previously, a key strategy to foster and expand the Circles network concerned the creation of economic linkages between businesses in the network. Economic linkages denote the intricate and reciprocal relationships among diverse sectors, industries, or economic entities within a given economic framework. These connections encompass both forward linkages, delineating the directional flow of goods or services from initial production stages towards ultimate consumption, and backward linkages, which elucidate the dependencies on inputs or raw materials provided by antecedent sectors (Raa 2020).

Through our interviews, we noticed the emergence of several fruitful linkages through subsided partners in the network. Specifically, within the context of Circles, we focus on Business-to-Business transactions. These transactions have proven instrumental in fostering a linkage between the parties involved, contributing to the expansion of their production capabilities and increasing sales through a collaborative business relationship.

A significant linkage has been established between Roots Radicals and BauerDirekt, two Berlin-based food and beverage businesses with a focus on sustainability. Roots Radicals is an authentic, handcrafted, and zero-waste food company dedicated to reconnecting people with food. On the other hand, BauerDirekt is a local and

sustainable enterprise that distributes fruits and vegetables from the neighboring Brandenburg region to Berlin.

Among BauerDirekt's array of products, they deal with green tomatoes, which, due to their acidity and other chemical characteristics, cannot be consumed directly. However, recognizing their potential value, BauerDirekt sought an innovative solution to avoid wastage and enlisted Roots-Radicals for the production of green tomato jam. The founder of BauerDirekt, already a significant consumer of RootsRadicals' products, decided to entrust them with the task. The green tomato jam, a result of this collaboration, has been successfully finalized and is now available for sale and distribution through BauerDirekt's website and services. This strategic partnership, mediated by CRC-based transactions not only addresses the challenge of food waste but also enhances the product offerings for both businesses.

Another synergistic collaboration within the Circles network involved Edible Alchemy, a fermentation business, and the ceramic shop Colorin Colorado. As revealed in the interview with the co-founder of Edible Alchemy, Colorin Colorado crafted a personalized set of pottery plates and cutlery designed specifically for use during Edible Alchemy's culinary experiences and fermentation workshops. These unique artifacts were utilized to enhance the overall dining experience provided by

Edible Alchemy's services. In return for these customized pieces, Edible Alchemy paid ColorinColorado using CRC, the currency within the Circles network. Subsequently, ColorinColorado utilized these earned CRC on the Circles marketplace. The co-founder of Edible Alchemy emphasized that this partnership, although driven by a strategic vision, was also influenced by the abundance of CRC at her disposal and the motivation to engage in spending within the framework of Circles' monetary protocol.

6. COMMUNICATIONS

Ensuring a clear and coherent narrative has been a priority for us at the Coop.

Our project goes beyond being just a technologically advanced platform with blockchain integration; it's also a community-driven universal basic income initiative. To effectively convey our product and vision, we've consistently aligned our messaging and content with the insights gained from regular assemblies and social media exchanges with our community. This direct communication has been instrumental in understanding and responding to the evolving needs of both local and global communities.

Given our diverse missions and audiences, crafting our narrative required intricate work. In the following sections, Circles Communications Lead, Damla Ozcelik (since June 2021) will delve into the key communication themes that encapsulate our strategy and vision as well as official social media and communication channels.

6.1 NARRATIVE AND KEY COMMUNICATION THEMES

UBI Advocacy

Universal basic income (UBI) is not just a feature of our wallets; it's integral to our project's growth. Our vision centers around placing people at the core, emphasizing that every individual deserves

value for simply existing in this world. That's why we are a huge advocate for universal basic income. "Making basic income a reality" was a big motto for us. Our engagement extends globally, connecting with other UBI projects, promoting pilots, and participating in international conferences and networks. Importantly, we stress that our basic income isn't state-provided but a groundbreaking, people-powered initiative. This concept required precise communication to convey our message effectively. Communicating this revolutionary idea, where community members empower each other without relying on the state, was a challenging yet vital aspect of our project due to its contrast to the existing economic system.

Community-based Currency vs. Cryptocurrency

Circles is a digital currency project based on blockchain technology. However, in our narrative, we wanted to make a clear distinction between Circles and the current understanding of cryptocurrency. Unlike Bitcoin or tokens geared towards profit generation, Circles derives its value solely from community usage and collective acknowledgment. It remains unlisted on exchange markets, detached from the manipulations inherent in current monetary systems. This was a key component of our narrative and we have published a few articles and put a lot of effort into creating educational material around how Circles work.

Community Building

Since Circles is only valuable as long as there is a community that accepts and uses it, our main focus for our communications was to support local and global communities. We've dedicated our time and efforts to connect individuals, assisting them in establishing alternative economies and finding ways to integrate Circles into existing networks as a viable alternative currency.

Berlin Pilot & Local Community

The Berlin Pilot stands as a vital component of the Circles UBI project, serving as a practical application of the platform over the past two years within

the Berlin community, making it one of the few existing UBI pilots around the world. Throughout this period, our social media and communication channels have been dedicated to addressing the specific needs of the Berlin community. This involves promoting businesses and individuals offering products/services for CRC, as well as fostering networking opportunities among community members. We've established dedicated social media channels tailored to the Berlin community, where we provide educational materials and technical support. Additionally, we've established connections with other local projects, festivals, and conferences to foster a broader sense of community at an organizational level. Regular in-person assemblies were hosted in Berlin, with social media playing a crucial role in promoting these events and ensuring the accessibility of information.

International Community & Assemblies

To connect with our global community and initiatives worldwide, we established bridges using the Berlin Pilot as a model, sharing information and insights. Through the creation of handbooks, FAQs, and additional supporting materials, we aimed to facilitate the formation of self-organizing communities. Regular online international assemblies were hosted, serving as a platform for people to understand and adopt Circles, engaging in discus-

sions about community-building around Circles. The communications domain served a crucial role here in engaging with global users and activating communities in multiple locations.

Educational Materials

One of the main goals of the communications domain was to ensure Circles technology was understood and evolved by the users. For this purpose, the information we shared had to be clear, inspiring as well as educative. The idea was to hand over the basic tools and the learnings, and let communities find authentic and original ways to create their own alternative economies with Circles. To support this endeavor, we crafted handbooks, FAQs, tax support documents, and business booklets, encouraging communities to proactively engage and take action.

User Support

We maintained accessibility through social media channels and emails, actively providing support for user inquiries and requests. Our assistance ranged from technical support to guiding users in establishing Circles communities. Additionally, we offered in-person availability for scheduled calls to support and share our vision. Through these direct engagements, we connected with our community on a personal level, identifying individual needs, and fostering a one-to-one care setting.

Privacy

For Circles, Trust is the key for communities to happen. Establishing trust involves practicing truthfulness, caring for one another, and respecting individuals' boundaries and privacy. Our work has consistently prioritized community consent and trust, aligning our technology with these core values. Explore our latest initiative, Circles Entropy, where we strive to enhance Circles technology by creating a fully private digital network. Given the sensitivity surrounding social media use and the potential exposure of community members' identities, we've consistently operated with consent in all our events, ensuring utmost respect for privacy boundaries.

Fundraising & Community Involvement

Circles Coop has sustained itself over the past few years through a combination of grants, donors, and community fundraising events. While the quantitative portion of donations from our community was not enough to sustain ourselves, witnessing continuous support throughout the project has been invaluable. Through various fundraising campaigns, we garnered support from individuals globally, and the messages and shared vision during these campaigns were particularly meaningful. Particularly through quadratic funding events, we successfully attracted a large number of supporters to our project. Not only did

these campaigns allow our community to actively contribute to the project, but they also provided an avenue for individuals to become stakeholders in Circles Coop.

Inclusion & Diversity

While individuals with technological proficiency may find it easier to navigate English-based systems, we aim to ensure that our system caters to a wide range of users, irrespective of their technical expertise. We recognize the importance of making Circles more accessible, particularly for individuals who rely on basic income and actively participate in alternative economies.

By focusing on accessibility, we can empower everyone to navigate Circles with ease. This requires us to develop user-friendly interfaces, provide clear instructions, and offer support for multiple languages via diverse social media/communications platforms. That's why we had multiple communications channels that are listed in the following section.

One effective way to support users worldwide is by translating the materials we have as Circles Coop. This helps bridge the language barrier and enables a larger segment of the population to utilize Circles effectively. By providing translations in various languages, we can make sure that individuals from diverse backgrounds can understand

and engage with the information, guidelines, and resources available. This inclusive approach enhanced their ability to navigate Circles, actively participate in their own local economies with Circles, and access the universal basic income support they need.

By providing translations of our system's interface, guidelines, and technical aspects, we remove language barriers that may hinder individuals from fully understanding and engaging with Circles. This empowers users to make informed financial decisions and conduct transactions with a sense of familiarity and comfort in their native language. By enabling users to communicate and interact with our system in their preferred language, we foster an environment that promotes financial inclusivity, trust, and confidence.

International events/conferences

Our impact extended beyond local events and online platforms. We actively introduced the concept of Circles and people-powered basic income at various international events and conferences. Engaging with similar UBI and blockchain projects, we continually enhanced our project through these exchanges. The international proceedings are documented on our blog and social media channels. Facilitating global collaborations was also a key focus within this domain.

6.2 OFFICIAL SOCIAL MEDIA & COMMUNI-CATION CHANNELS

Twitter/X: With over 23K followers, this has been the main platform where we reached out to our global audience. This platform served well especially connecting with other UBI and blockchain projects, as well as individuals who share the same vision as our Coop.

Instagram: With over 2K followers, this platform was especially useful in connecting with our local network as well as global UBI projects. This platform served as a hub for promoting businesses and offerings associated with Circles, facilitating active participation from our Berlin community and business network, as well as sharing educational material. Through this channel, we not only received valuable feedback but also effectively announced upcoming events.

Telegram General: With over 1,6K participants, this platform played a central role as the primary hub for Circles users to engage in mutual interactions. It served as a space for establishing trust connections, providing feedback, and fostering collective discussions among the community.

Telegram Berlin: Initially created as a marketplace, this platform over time became a community space for the Berlin Pilot project. Community members were offering or looking for products/

services as well as announcing events. It has also been a powerful space for trust, networking, and solidarity for the community.

Newsletter Archive: Throughout the project, we have been announcing our major accomplishments and progress via newsletters for over 80K subscribers. This platform served best to activate our global community, fundraising and educational purposes.

Blog: We consistently published a variety of articles to effectively communicate with our community. These articles served as a valuable tool for providing comprehensive insights into the project from various perspectives. Moreover, they allowed us to articulate project progress and share educational materials with Circles users, enhancing overall understanding.

Videos: We wanted to showcase the live experiences of the Circles project in Berlin as it unfolded. Visit our Vimeo and YouTube channels to explore testimonials and firsthand accounts related to Circles in Berlin.

Publications: Our research and progress have also been published in academic journals, providing a platform to share our knowledge and findings derived from the Pilot project and the utilization of Circles technology.

Educational Materials: We've produced resources to ensure our audience gains a comprehensive understanding of the project. Our FAQs are crafted in straightforward language to address a wide array of questions, ensuring accessibility. The handbook outlines key concepts for establishing a Circles community, while the business booklet and tax documents provide support for businesses engaged with Circles. For further details, see the related section under Berlin Pilot.

joincircles.net Website: Here, we aimed to provide all the information and materials needed to guide all the users from all around the world. We introduced how the wallet, UBI, and community building work around Circles. It's designed to support users globally, sharing the findings of the Berlin Pilot as well. See the Product section for more details.

Circles.coop Website: The vision, mission, and history of the Coop can be found on this website. See the Product section for more details.

7. TEAM

The Circles Coop were:

Board
Julio Linares, Head of Strategy
Blanka Vay, Chief Executive Officer

Community Activator Team
Emma Tondo Tondo
Sofía Laura Salas
Carmela La Spina
Karenina Schröder
Caroline Goethel

Communication
Damla Ozcelik

Finance & Administration
Katharina Brünner

Product Design
Lucia Trias
Marianna Manoura
Rucha Joshi

Strategy
Ela Kagel
Andreas Arnold

Bitspossessed Developer Team
Sarah Friend
Andreas Dzialocha
Elena San Miguel Pérez
Louise Linné
Kaustubh Srikanth
Jacque Galarza Monta
Mikolaj Zimny
Juan Enrique Alcaraz Pérez

Business Partners

We would like to thank all of our business partners for co-creating the Berlin Pilot, and endless support during the whole project. You can find more information on them on our website: join-circles.net

Bauer Direkt
Blaue Bohne
Bobooki / FDO Solutions GmbH
Colorin Colorado
Coop Space (ambassador pilot)
Coral Ruz
Crow Cyclery
Diana Pacheco Pozo
Edible Alchemy
Era Zero Waste
FemAle
Gestalttherapie - Anja de la Pena
Herbie Unverpackt
Katari Farms (MicroGreens)
Lukas Brose - Thai Yoga Massage
Madame Zorro
meta:morfosis
Roots & Wings (Vasi)
Roots Radicals
Sica
StartupConsult
Tiny Farms
Visual Walkabout (off subsidy)
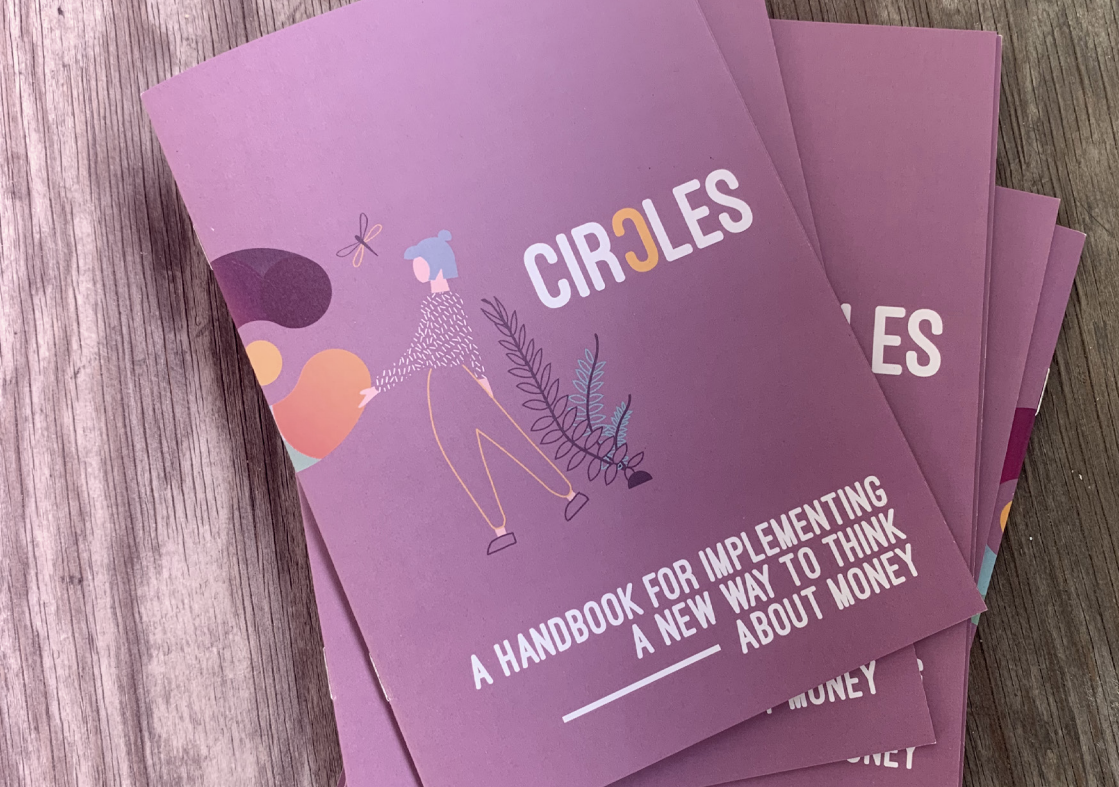
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Circles Coop eG i.L.
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