

POSITIVE IMPACT WITH COMMUNITY CURRENCIES

Master Thesis Strategic Product Design

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ACKNOWLEDGEMENTS

When I first read about community currencies they made me very curious. Many questions emerged which told me that there was a lot to learn; and learning there was, it took a lot of time to get through the available information, let alone to select what was relevant for this graduation.

In front of you is the result of many hours drawing, reading, thinking and writing. It is a piece of work I am really proud of. I'm really glad with the freedom I had to make this project my own. Without this freedom I couldn't discover as much about community currencies, sustainability and myself as I did now. I'm really glad for the support of Anna Noyons, Jan Buijs and Edgar Kampers. They took a critical look at my work and then challenged me to dive deeper and make it ever more concise. I'm also grateful to my colleagues at Qoin. They helped me when I had questions and I learned a lot about initiating and running currencies by simply following their day to day activities. I spend the Thursday's at Peerby's office. This was always very refreshing for my work. I want to thank everyone at Peerby for their hospitality!

Throughout this rollercoaster ride my girlfriend, friends and family were very important. They were always there for a mental boost. Listening was often enough to help me forward. Overall the graduation has been the greatest project of the master's program (not at every moment but for a large part). In this project I could apply everything I learned up until now. It is a great sensation to surprise yourself with the things you are actually capable of doing when you take the time to do so.

I'm looking forward to the challenges ahead of me. I do know that I get enthusiastic about social themes, especially when they are technically on the cutting edge of what is done before. During my career I would like to work on new products and services that bring society, business and technology closer together.

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ABSTRACT

Money is an essential technology used every day by many people. Its use is beneficial for efficient trade and saving. The aim of this graduation is to create a form of money, a so called community currency which has a positive impact on the environment. With community currencies people take back charge of their economy. Over time money went from these local initiatives to centrally organized legal tender. This has had positive effects on the world's economy and our lives but recently we stumble upon limits which the free market seems incapable to solve by itself.

To summarize: Overall life satisfaction no longer rises in sync with the economy, with money people prefer to be free of dependence, wealth keeps on concentrating in the hands of fewer individuals, capital mainly ends up in regions that have a good and certain return on capital, with dampening population growth we might stumble upon a growth ceiling one day and the costs of harming society or the environment are not necessarily brought back to the source of this damage.

Community currencies are money complementary to legal tender with the aim to satisfy needs or represent values which are experienced as important but not commonly facilitated by legal tender. Advancement in information technology makes it easier than ever to initiate and maintain community currencies. For designing a currency it is important to take into account its reference value, backing, governance structure and legal aspects.

Community currencies can be sub divided in the following categories, of which hybrids are possible: Loyalty schemes, crypto currencies, Barter trade, gamification-, regional-, saving- and social cohesion. Using the data of some existing currencies it was noticed that currencies with dominant individual benefits reach the largest number of people and that a balance between individual and social/societal benefits unlocks the highest economic impact per targeted user. Alternatives to community currencies, which can achieve similar results, are taxes, subsidies, educational campaigns, labels and cap-and-trade policies.

Another method is stimulating investments in the topic of choosing or divest from opposing values. Community currencies have a few benefits relative to the alternatives namely its local scale, providing a means to ask for help, make boundaries between groups open up, leave people with the choice to use it, allow for creativity and receiving positive reward. Some factors hold back community currencies to prosper and emerge more frequently. Main reasons for this resistance are a lack of spending opportunities, success being depended on economic crises, a lack of familiarity with the topic and diverse rules and regulations across countries.

This resistance could be overcome by utilizing networks of strong brands or existing communities, being a technology exemplar for main stream money technology, educating the community, providing users with a stable value, striking a good balance between individual and social/societal benefits and the ability to make the currency run autonomously on a financial level.

We know by now that it is human activity that led to global warming. It is important for human civilization to take action and reduce the impact over the years to come to stay within limits to the amount of greenhouse gasses we can emit without excessive damage. To achieve progress the global renewable investments should be doubled. The emissions of developed nations however appear artificially low because the surplus of imported goods is not taken into account. To make progress, subsidies moving towards fossil fuels should be reduced because burning current reserves would exceed the Carbon Budget five times. For progress the Rebound effect should be taken into account, but most of all action is required!

For the design phase of the project clear user objectives were set for acting upon environmental sustainability, the first one is to make users invest €214 in the year 2018, a total of €1.286 from 2015 until the end of 2020 and/or reduce CO_{2e} outputs with 30% for the targeted topic by 2020. It is predicted that the world will get increasingly equalized in the following years and organization will happen bottom-up instead of top-down. This results in empowered people but lacking capabilities to act upon societal topics. With the

following ambition the designer aims to tackle raising conflicts and these lacking capabilities: “I want people to experience encouraging confidence by tapping into abundant sources like human relationships, knowledge and the energy of the sun in a demanding world.” As the means to achieve this ambition “Constructive Empathy” was set as the desired interaction. Its meaning is to continuously find the common ground and use this to work towards greater confidence in self and others. Based among others upon the values of this interaction a smaller domain ‘Family Life’ has been selected to focus design efforts. For this domain the designer experienced an optimum between design freedom and guidance.

It was found that the ‘average’ family we usually have in mind is in reality a mixed family, due to divorces or new forms of living. Relatives and friends increasingly become part of the family. This new family is named ‘the family tribe’. The desire to remain a ‘normal’ family leads these tribes to bring emphasis on family values. Pride is taken in these self-crafted families; they bring increased focus towards finding the right people.

Within this family context around 150-200 separate ideas were generated with a focus on environmental sustainability. The ideas were then clustered and combined into eleven potential concepts. Three were selected as the most promising but Around the Corner became the final concept. Around the Corner is a holiday booking platform that stimulates users to go on holiday nearby. The focus on travelling distance makes a significant impact on reducing emissions because the trip is almost half of the total holiday emissions. The closer users stay nearby home, the more Locals they get back after booking. These Locals (€ value) can be used to pay for another holiday, sent to a friend or used for services at the accommodation.

Locals are the community currency of the platform which is denominated in Euros but cannot be exchanged by holiday visitors. Accommodations always give a discount of 20% (this is relatively common). By selling products or services to the users they can earn back the discount they gave. The part of the discount not handed over to their visitors (in case they came from far away) is saved at a separate CO₂ compensation balance. The accommodation can only use this

balance to invest in renewable energy, resource reduction or plants and trees. This balance can only be spend at Around the Corner and is aimed to compensate for the travel emissions.

The advantages of Around the Corner relative to the other concepts were a low rebound effect (because discount is invested locally and green), its visibility, the ability to connect strangers, a potential annual reduction of 2% of the family’s CO₂ with a single decision and it aligns well with Qoin’s capabilities. So far green accommodation labels don’t take journey emissions into account. With this platform the other 45% of holiday emissions can be targeted. Accommodations are likely to meet the set renewable investment objectives. It would be great if they can set an example to their visitors and inspire them to invest green as well.

Around the Corner is designed with family tribes in mind. The system is envisioned in such a way that it stimulates its users to get creative. The downside is that the system is hard to protect. The business model’s low margin can help to protect it from entry of competition. The concept requires between 15.000 and 20.000 bookings to break even, looking at the market size it seems plausible to make a currency with financial autonomy.

Around the Corner turned out to be extremely scalable; by allowing for payments with tokens and an app the threshold for accommodations to make an initial investment is taken away. It makes self-help payment technology available to small accommodations and shops. At the interviewed accommodations they indicated their willingness to give it a try. Families were also very positive and it was surprising to see how quickly children understood the concept’s working. The current prototype is a viable starting point and could work in real life with the envisioned functionality. Overall the designer is proud on the end result. It would be great if Around the Corner becomes a reality one day.

Money comes across as something abstract and unchangeable, but community currencies show that it is actually possible to design this medium. If used well currencies can act as an intermediary to better balance the interests of individuals, industry, society and the environment.

TABLE OF CONTENTS

Introduction 7

Money 8

Community Currencies..... 10

The Sustainability Objective..... 15

Vip Method..... 17

Broad Context 19

Interaction..... 21

Focus Area 23

Ideation 25

Concepts..... 26

Selecting a Concept..... 29

Around the Corner 30

Looking Back..... 33

References..... 35

Appendices..... 43

INTRODUCTION

Money has become a central theme of discussion over the last years. The budget cuts, bank bailouts, indebted countries, multinationals acquiring other firms, inequality and currencies such as Bitcoin are everyday news. During the course of this graduation the idea that money should be taken for granted is challenged. It is shown how community currencies challenge this assumption. The acquired knowledge is used to design a new currency which encourages sustainable use of our planet.

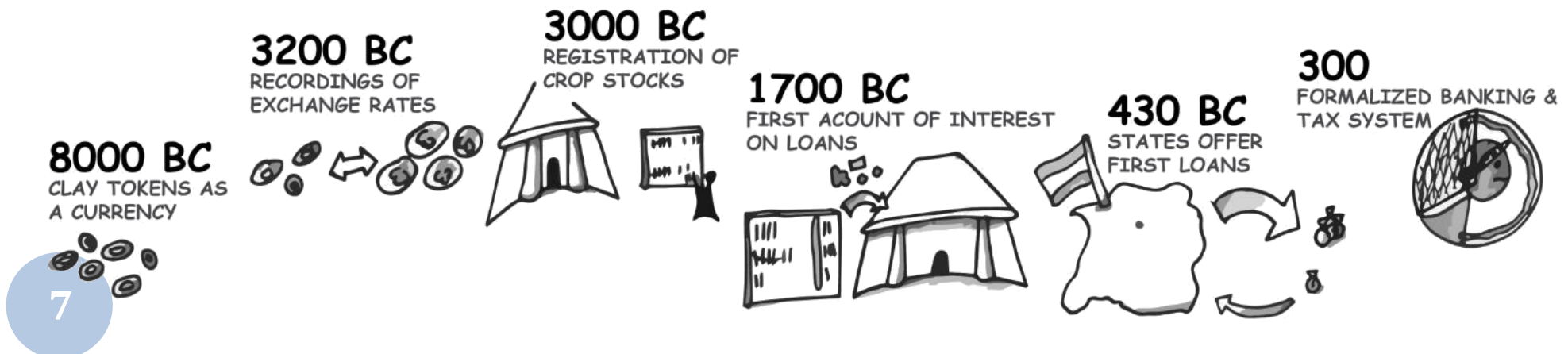
The graduation is done in cooperation with Qoin. Qoin is an Amsterdam based consultancy firm that develops and launches community currencies all over the globe since 1998. Their mission is “to change the world’s financial systems and enrich society in a disruptive way” (Qoin, 2014a). A currency that stimulates sustainable behavior has been on the wish list of Qoin for many years. This graduation aims to contribute to Qoin’s mid to long-term Research and Development. It is valuable to give a fresh perspective to the matter and shine light on the opportunities currencies offer in the green domain.

The main findings and results are presented in this report, extensive information on the community currencies can be found in appendix I. The main method which defines the design process of this graduation is the Vision in Product design method. More information on this method and why it is used can be found in the respective chapter “ViP method”.

As a start of the design process a potential future is imagined and a focus area within this domain selected. Objectives are defined within the sustainability domain in the chapter Sustainability Objective. At a later stage those are used to reflect upon the most promising concepts.

For this study interviews with users of community currencies were executed. Throughout the report the names of the interviewees are regularly displayed with the first letters of their name and surname between brackets (e.g. Erik van der Velde becomes [EV]). A questionnaire has been sent out in which people were asked to reflect on the themes they find important and how sustainability relates to this. Currency interview- summaries can be found in appendix III and summaries of the interviews executed for the prototype of the final concept can be found in appendix XVII.

Enjoy reading!



MONEY

Money is a technology that has developed over many centuries (See Figure 1 for a brief history). It facilitates trading because it allows goods to be translated into value. This translation makes for easy comparison of products or services and allows exchange for a price. Money can also be stored; it usually doesn't deteriorate and can be used at another moment in time. This is especially helpful to cover seasonal fluctuations or save for later. In Figure 2 the three basic functions are visualized (Cliffsnotes, 2014).

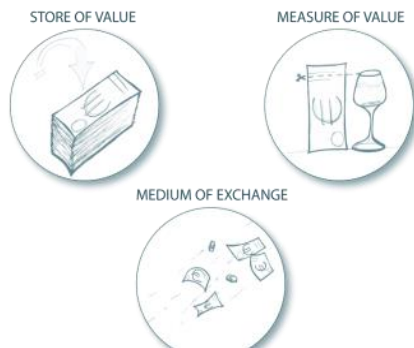


Figure 2: The three basic functions of

certain industries, generally with limited risk of losing supply of goods that are not sufficiently produced locally.

The money we use is intrinsically not as valuable as most people think. Currencies such as Euros and Dollars are fiat currencies; they are to a large extent created by banks at the moment a loan is issued. This means the money supply is directly linked to debt. The central banks control this creation process. By doing so, the central authority can influence the amount money in circulation and with this control price levels. This is how our trust in the currency remains (Nichols, 1961). Authorities usually strive for a slight inflation to encourage spending and decrease the relative debt burden. The fact that money is mainly created in the

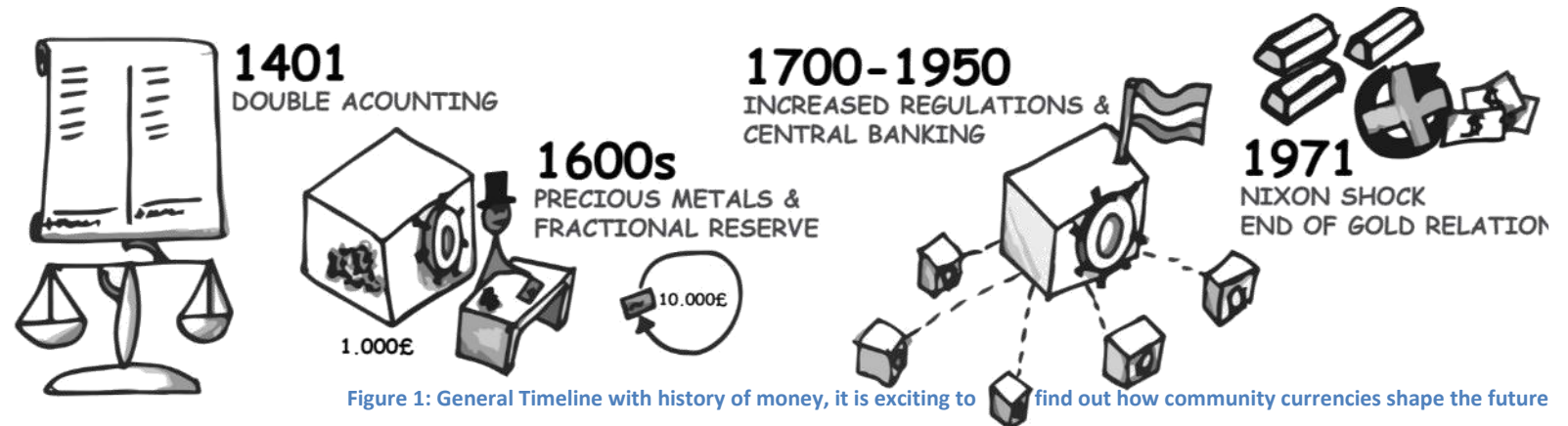


Figure 1: General Timeline with history of money, it is exciting to find out how community currencies shape the future

form of debt tells us that it is no wonder that a raising economy goes hand in hand with raising debt levels. Up until 1931 the money at the Bank of England (and many other banks) was backed by gold under the gold standard, this means that the money could always be exchanged for a set amount of gold at the bank. During the recession it was decided to break the direct connection in order to gain more control over the money supply and bring back stable prices (McLeay, Radia, & Thomas, 2014). After World War II it has been internationally decided to use fixed gold prices between countries. This has temporarily restored a connection to gold. In 1971 the gold standard was fully abandoned under the rule of President Nixon.

If the value of legal tender would still be connected to gold or another source of value and this becomes scarce the money in circulation also becomes scarcer. As a result prices have to drop for purchasing power to remain equal (deflation). When a large amount of gold is found inflation occurs. Here you see how the availability of money can influence the economy. Removal of this direct connection allowed for further expansion.

Trust is one of the key drivers of the money we use on a daily basis. Money and the connected institutions are developed provide the stable conditions to avoid crisis and continue large scale operations. Policies concerning money are, to a large extend, focused on the macro level. This has allowed for scale advantage, which in turn contributed to our advanced technology and increase in individual welfare. We however seem to stumble upon limits, especially when we zoom in to the micro.

“Not everything that can be counted counts and not everything that counts can be counted.”

-Albert Einstein

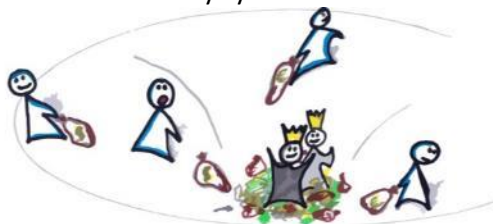
LIMITS

Do we really need ever increasing welfare? Studies found that despite recent economic advancement overall life satisfaction is not climbing (Easterbrook, 2003. Diener & Seligman, 2009). There no direct connection between welfare and happiness.



Other evidence has found that money brings about a self-sufficient focus. Due to money people prefer to be free of dependence. Even reminders of money led people to prefer reduced dependency and dependence to others (Vohs, Mead & Goode, 2006) [NS].

Recently Thomas Piketty argued that wealth keeps on concentrating to the benefit of a few people. He suggests that this is a result of the Rate of Return on Capital being greater than the growth of the general economy (Piketty, 2014). This indicates that legal tender within this monetary system has the tendency to make the rich richer and not necessarily distribute money evenly. In a reply to the book of Thomas Picketty, Bill Gates agrees with the statement and says that “capitalism does not self-correct towards greater equality” and that “Governments can play a constructive role in offsetting the snowballing tendencies” (Gates, 2014).



Gates suggests philanthropy as an important part of the solution. Philanthropy can help to lower inequality; the Gates Foundation does this by giving part of the return on capital away. In this way the very rich can give without significantly reducing the growth of their capital. Question is whether increased influence of the rich on the world, even by the means of philanthropy really leads to increased equality.

Another issue is that capital is mainly invested or given as a loan to organizations that have a good return relative to the risk. This is understandable from the perspective of an investor or someone that is saving. It however reduces the access to capital for organizations that are located in areas or industries where growth or profits lack. As a result complete regions can experience economic depression.

Related to growth; we can ask ourselves whether growing returns can forever be sustained. Interests on interests results in exponential growing capital. With population growth dampening we might stumble upon a growth ceiling one day.



Last but not least the monetary system does not necessarily bring the costs of damaging the society or environment back to the organization or individual doing the harm. This makes it is possible to grow financially at the expense of society or other external factors. An entity can inflict damage which is more expensive to restore than the profit it actually makes.



COMMUNITY CURRENCIES

Money is often taken for granted but exceptions can make you realize that it is a manmade technology developed over the course of time. If you think of different forms of money it is likely that crypto currencies such as Bitcoin come to mind. This might be a well-known currency but there are actually many community currencies in existence today and in the past. This chapter gives you an overview of the types of currencies in existence, their technical features and the main conclusions derived from studying them. For more details on these currencies appendix I can be consulted.

Community currencies can be defined as a form of money complementary to legal tender which creates a local economy with values experienced as important but not commonly facilitated by its legal counterpart (Based upon definitions of Lietaer & Hallsmith 2006 and Qoin, 2011). Community currencies (also called complementary-, community-, social-, alternative-, private-, or local currencies) are an interesting tool to overcome negative aspects of the economy (See the previous chapter for these limits). It allows groups to use their money and explore its potential to meet local needs.

Advancements in information technology make it easier than ever to initiate and maintain new currencies. Community currencies tend to come and go around times of crisis. In some cases, like the Austrian Wörgl, the government saw it as a threat and took the currency out of circulation while it seemed successful (Kennedy, Lietaer & Rogers, 2012). Nowadays community currencies work in parallel with the regular economy more often. There is however still opportunity to overcome resistance and increase overall impact of the field.

An overview of the different types of community currencies are presented and describe on the following page (Figure 3). The main groups were projected over two axis; the creation process and main interest users have in using the currency (individual or social/societal). Categories are less rigid than they appear, combinations can be made and one goal can also strengthen the other. Calculations made with the available data show that currencies positioned in the center of the User Interest axis have a higher financial impact per potential user (Details in appendix XV). Aiming at the right balance can be an effective strategy for community currency design.

REFERENCE VALUE

Community currencies have a large range of what is called reference values. This is the value in which the currency is represented on bills or in digital form (denomination). It can for example be referenced to points, time, an amount of certain commodities or legal tender.

BACKING

The reference value of a currency shouldn't be confused with its backing. Some currencies refer to a certain value but are not backed by it. Backing in currencies can be defined as a currency "whose value has a direct correspondence with the value of a commodity (such as gold), whether or not it is redeemable in that commodity on demand." (Business Dictionary, 2014). The backing is the value it represents; in case the currency is redeemable it can (in most cases) be exchanged for the commodities it is backed by (Which can be legal tender). In some cases restrictions apply to the redeemability of a currency. Redemption can for example only be possible for businesses but impossible for regular users. If a currency is not backed the value is determined in use by the community through supply and demand.

GOVERNANCE

Governance can be quite complex for currencies. Because it is designed with a certain purpose for a community, there are many choices to be made and user groups involved. Commercial and non-profit operations also influence the design of community currencies. In some crypto currencies the money can be owned by the whole community, this makes governance even more complex.

LEGAL ASPECTS

It is well known that it is illegal to copy fiat currencies; it is however legal to create new currencies as long as they comply with the law. The conditions vary widely from country to country. Currencies backed by legal tender often fall under tax regulations (paid for in legal tender). Time currencies (hour denomination) are often treated as voluntarily work which is limited on annual basis (UWV, 2014). For more details on these legal aspects including liability and privacy see appendix IV.

EXTERNAL

RELATION BASED

CREATION PROCES

< €1

> €1

> €10

ANNUAL IMPACT
PER TARGETED USER (€)

CRYPTO CURRENCY

This category includes currencies which are set up with the aim to decentralize ownership and creation of money. They are also known as crypto currencies. This group gains the most attention but is still speculative (Baek & Elbeck, 2014).

RIPPLE



2013

BITCOIN



2009

AIR MILES

1988

LOYALTY
SCHEMES

Currency made with the aim to increase loyalty towards a certain organization. It is regularly created by retail stores or chains to give consumers an incentive to sterr their behavior Loyalty Schemes are probably the best known and understood currencies.

D.E. POINTS

1924



WIR



1934

BARTER TRADE

This currency has the goal to strengthen the small to medium enterprises by stimulating trade amongst them. The currency usually offers the user with an opportunity to obtain credit backed by the network. The companies can advertise and tap into the local business community.

TRADEQOIN



TRADEQOIN

2012



Figure 3: Currency overview, currencies are displayed over two axes; the main interest users have in using the currency (Usage Driver) and its creation process

THE ALTERNATIVES

Currencies are not the only option to make a positive change to behavior. In this section an overview is given of the alternatives that work towards similar aims as (community) currencies. In the conclusion of this section is argued why currencies are an interesting addition to the options.

The first relatively obvious alternative is **taxation**, with taxes people can be steered in their behavior because it can make harmful or anti-social choices more expensive. In a way the government decides what is right and what is wrong here. Individuals might feel restricted in their freedom with interventions like this. The underlying assumption is that people are rational decision makers, making decisions based mainly on price. Choices are however emotional to an extent. Taxation is a negative incentive which is generally less effective than a rewarding one. It could however also include import or export taxes which are less visible to consumers. More often than not taxation influences the economy on a macro level.

Subsidization is another option. It cannot pay the complete price but it creates an extra incentive. This approach becomes harder with the current budget cuts. As can be seen with green cars this method can be effective. It however also leads to a peak which is partly populated by people that planned on making the purchase at a later stage. In general it is a more positive approach than taxation but the money has to be collected through taxes before it can be distributed as a subsidy (assuming that countries want to limit the extra debt carried). Subsidies are more suitable for actions on a micro scale and can for example be targeted at specific research areas.

Another option is **cap-and-trade**. This is so called emission trading; a legal limit is put to the amount of emissions of a particular gas that is emitted. The authority then sells emission property rights that match with this cap. Firms have to hold the amount of emission permits equal to their emissions. The cap is then gradually reduced by the authority. By giving fines to the producers which have a shortage of permits they can potentially enforce a decrease over time. It has been used globally for over thirty years and has especially been successful in the battle against acid rain and ozone. Using a trading cap, can result in progress and it makes firms pay for externalized costs. The main issue with this system comes

from international trade of permits. There are different rules and costs associated with the permits from one nation to the other. Overall cap-and-trade can have a large scale impact but it is a complex political process relying on the actions of many stakeholders (Tietenberg, 2010).

Educational or information campaigns are another option of making people aware of their behavior and offer alternatives. This method can be helpful, as an example the Dutch BOB campaign (Consciously sober drivers) is widely known in the Netherlands. The downside of this type of campaigns is that it does not directly intervene with consumer choices but merely guides. Stop Smoking campaigns are found to increase quit attempts for smoking on the short term but they show a lack of impact on the longer term (Wakefield et al., 2011). It requires lengthy and refreshing campaigns to have effect for a longer term this is a costly process.

Another option is the usage of **labels** to guide people in their choices. This helps for making more conscious decisions around the topics of interest. But recent research shows that a majority of Dutch citizens indicates that there are already too many labels in circulation. This leads to confusion (Milieu Centraal, 2014). Labels are helpful but this area seems to be rather saturated. The last option for individuals is using their savings to **invest** in the areas they find important or **divest** from fields they dislike.

Overall currencies are a good addition to the previously stated options and offer an opportunity to organize the economy and the way we collaborate in a new way. The following relative benefits are spotted:

- Currencies operate on smaller scale to the needs of a community
- They allow for saving, and give an excuse to ask for help later
- Boundaries between groups can open up
- It leaves people with a free choice of using it
- It allows users to be creative and use it their way
- Currencies can give a positive incentive/reward

CURRENCY CONCLUSIONS

The following section gives an overview of the conclusions derived from the research into the different community currencies and the interviews with its users (See appendix III for interview summaries).

STATUS QUO

Community currencies are a promising tool for empowering community members to take charge of their economy. They can use it to add more focus on particular areas, shining light on underexposed needs of individuals, groups or the environment. If people choose to use a scheme it can help them to behave in line with the set ambitions (See Appendix I for details on community currencies). Complementary currencies are relatively easy to introduce in physical and/or digital form. Through trial and error new forms of money are developed. The high quantity of schemes and the ability to iterate quickly helps the field develop towards increased impact.

So far there are factors holding back expansion of community currencies on multiple levels, this might explain the slow but steady growth over the years.

Overall this resistance is not insurmountable, as you can see below:

- Due to the local nature of community currencies **spending opportunities** are **limited**, this can result in lower perceived value (relative to legal tender) causing users to become inactive if their savings cannot be spend usefully [EV] (Witt, 2008).
- People are generally not very familiar nor comfortable with new forms of money. This **knowledge gap** has to be overcome by education and getting people in touch with currencies [SW].
- So far the creation and success of community currencies has, to a large extent been **dependent on economic crises**. This is also strength because community currencies are found to help ease the negative impact of economic downturns (Stodder, 2009).
- **Diverse rules and regulations across countries** make it fairly complex and costly to create a community currency operating on an international level. Google has tried to launch a private currency but the project got cancelled due to diverse regulations (Yahoo News, 2012). New currency-related regulations in the years to come can cause instability over the long run.

FUTURE OF COMMUNITY CURRENCIES

To overcome the indicated resistance to the field's expansion and provide a chance to outperform expectations, the following strategies are proposed:

- **Utilize the networks of strong brands or existing communities.** This helps to push more quickly towards critical mass, use demanded spending opportunities and/or make use of a trusted identity for communication, this can reduce the knowledge gap.
- **Inspire and bring money technology forward.** Being a source of inspiration for existing legal tender technology can increase the positive perception of community currencies and allow for more space to explore its potential [AM].
- **Educate the community** and show them in real life what complementary currencies can mean for them. Currently people are likely to associate community currencies directly with the speculative aspects of crypto currencies (Baek & Elbeck, 2014. Ron & Shamir, 2013). It is important to show people the other side of the 'coin'. It can help to be honest about a scheme's opportunities for improvement and the communities input. Users might be perfectly able to solve it autonomously. This form of Co-design can increase the user's passion for the scheme and with this the currency's overall impact (Sanders & Stappers, 2008).
- For a high economic impact per targeted user **a good balance between individual and social/societal benefits** (See Appendix XV) should be found. Note that there is more to a positive impact.
- For building trust **a stable value** is preferred. This can be realized either by a guaranteed transferability for something of value, a fixed denomination (in a stable currency, -service or -asset) and by setting restrictions to conversion into legal tender.
- Ensure that the community currency can **run autonomously on a financial level**. This provides the users with certainty their value won't be lost and makes indefinite support possible (Appendix V: gives more information on achieving financial autonomy).

The actions mentioned can increase the positive impact community currencies have on our lives and make it more likely for schemes to withstand every economic climate.

THE SUSTAINABILITY OBJECTIVE

It is only very recently that we saw the earth from space and realized that what we have is finite. This is a very different experience compared to when the earth was 'flat' and exploration of new lands an everyday business. In this chapter we explore environmental sustainability and set objectives that help to make design for this topic more concrete. The aim is to help enable human civilization to sustain their activities peacefully in sync with the planet (Thwink, 2014). For a more detailed explanation of this increasingly important topic and why the main focus is put on reduction of greenhouse gasses you can consult Appendix XIII.

We now know that human activities are the main driver of climate change. There is a limit to the amount of greenhouse gasses we can produce to keep earth livable. Opposed to common thinking there is no balancing point, but there is an absolute limit to the CO_{2e} that can be pushed off in the atmosphere. The limit has been framed as the 'Carbon Budget'. The maximum temperature increase which this budget is associated with is 2 degrees Celsius. This limit is set to keep the consequences of warming restorable with minimal costs for the current and coming generations (Alcamo et al., 2013. IPCC, 2013).

Greenhouse gas emissions appear to be the most prominent topic for environmental sustainability because it requires action soon. We have to remain

within the Carbon Budget if the effects of the warming are to be limited. Current actions to mitigate the warming lack because:

- Overall green investments should be about twice the current level to meet the required projections for 2020 (CPI, 2013. IEA, 2013)
- Emissions of developed nations appear artificially low because the CO_{2e} gap between imports and exports is not taken into account (Alcamo et al., 2013. Ederer & Weingärtner, 2014).
- A large amount of governmental subsidies moves towards fossil fuels. Evidence indicates that this amount is still around 6 times as much as the total renewable energy subsidies (IEA, 2013).
- Energy companies are investing heavily in the exploration of new fossil fuels while the emissions of burning the current reserves would exceed the Carbon Budget five times (Tracker, 2013).
- Environmental sustainability is a relatively abstract matter and we imagine the consequences to appear at a distant time. The urgency of the matter is underestimated (CBS, 2010).
- People don't feel engaged to take action for environmental sustainability (See why in Appendix VII: Questionnaire).
- A raise in energy efficiency goes hand in hand with increased usage of the product or spending of the saved money on something more harmful to the environment, this is called the Rebound Effect (Chakravarty, Dasgupta & Roy, 2013).

WAY FORWARD

There is enough evidence indicating that more action should be taken to preserve our current climate. Governments can play a role in this transition but efforts of an individual country are not enough to solve this global issue. Given the limited amount of time, outsourcing of the problem, relatively slow governmental bodies and big established fossil fuel industry, a transition has to take place on the level of the individual. There is however is no single effort people can take which results in emission reductions sufficient to stay within the carbon budget. Reductions should be achieved through a wide range of topics. See Figure 5 for an overview of direct and indirect emissions of the largest topics for an average household (Milieu Centraal, 2010). Even completely cutting



Figure 4: Impression of climate related issues that emerge

emissions of one of the biggest topics; food or transport can't reduce more than 25%. Additionally it is crucial that monetary savings caused by the reductions are invested in environmental sustainability or spend with low emissions per Euro. If we don't, we keep walking the same road taking one step forward and two steps back.

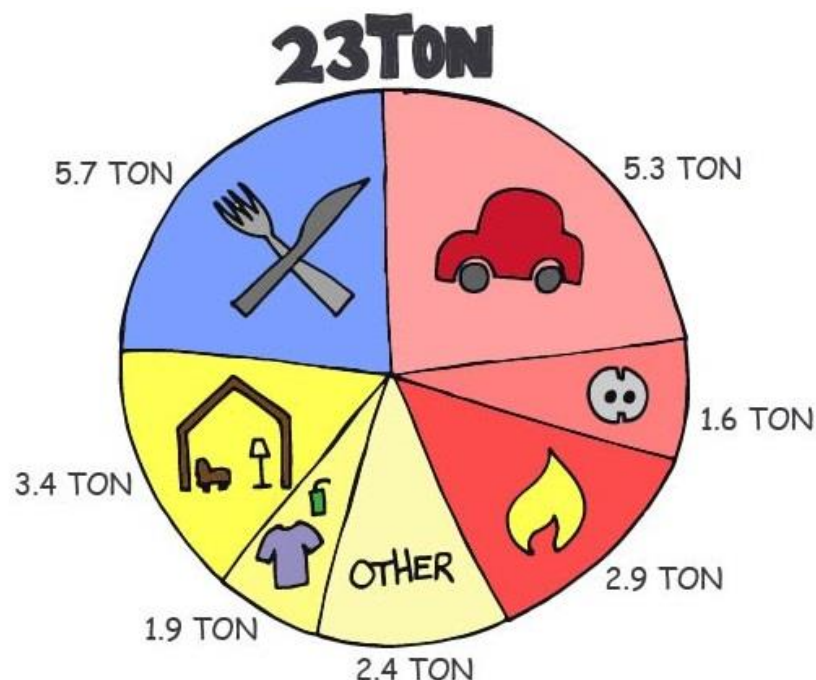


Figure 5: Overview of average annual CO2 emissions per household in tons

The emissions generated for maintaining a crypto currency stand out in a negative way. The distributed nature of crypto currencies requires a large amount of calculations to be done by the mining hardware. This takes up a lot of energy. Based upon several sources it has been estimated that the CO₂ outputs of Bitcoin are about 850kg per user per year. When this data is used to calculate the impact of one user in a household it accounts for about 3.7% of their annual emissions (See Appendix XIV for calculations from different sources).

OBJECTIVES

It is beneficial to make sustainability a more tangible topic for an individual. To make a step towards tangibility clear goals are set that can help to guide a person in his efforts for a more sustainable future. The objectives are also used to compare this project's concepts at a later stage.

The following objectives are set for the product or service within the Netherlands. The objectives are on a per user basis in order to make it concrete and scalable with the user base. (See Appendix IX for an overview of the calculations made to set these objectives.)

- The first objective is to **make active users invest €214 in environmental sustainability per year by 2018**. This doubles the 2013 average annual green investments (359 Billion Dollars). The calculations are corrected for spending power (GDP PPP) which is about 3.3 times the world's average in the Netherlands.
- The second financial objective is to **have users invest a total of €1.286 from 2015 until the end of 2020**. This demands the invested amount to increase every year (See Chart 1).
- The third and last goal is to **reduce CO_{2e} outputs per user with 30% within the targeted topic by 2020**. This is relative to 2010 outputs of 23.000kg CO_{2e} per household per year.

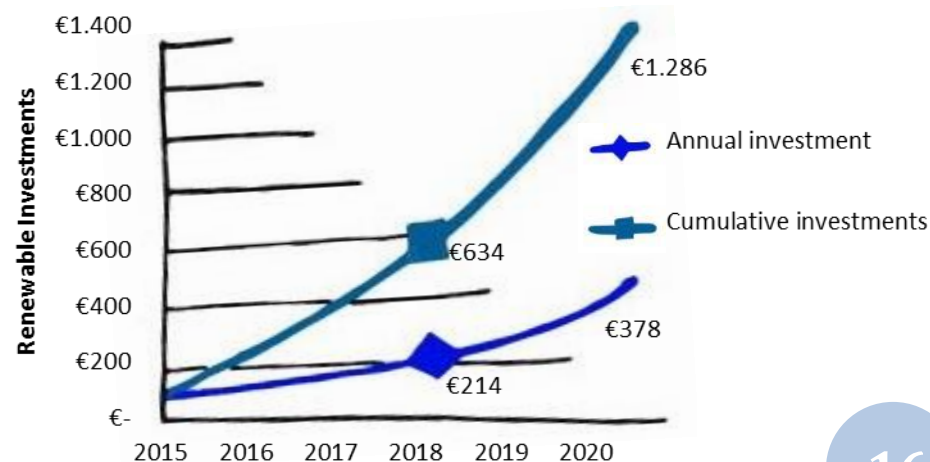


Chart 1: Renewable investments, cumulative and annual

ViP METHOD

In search for a suiting method to guide the design process of this project the ViP method was selected. It seems to be well suited for guiding the design of products and services for a new or relatively young market. Other methods available have a stronger focus on competition. This is very suitable for more mature markets but for markets such as community currencies it appears to be worthwhile to take a step back and design for a potential future. For small markets competition can even be beneficial to accelerate growth. Tesla is a good example of a company which welcomes competition to allow for faster market development. They opened up their patents for other car manufacturers to use (The Daily Beast, 2014).

Because the Community Currency market is still relatively small and upcoming it has been decided to use the Vision in Product design (ViP) method. From personal experience was observed that designs made with the ViP method were challenging the status quo. It has the potential to bring a fresh perspective to currency design. The second reason for using the method was to get out of the comfort zone as a designer. With ViP you make underlying intentions and assumptions explicit.

The method is developed in and around the Industrial Design Engineering Faculty of the Delft University of Technology in cooperation with actors in the field. This method is aimed to avoid a focus on everyday problems. Instead design is treated as an opportunity to look for new possibilities based upon possible futures (Hekkert & van Dijk, 2014).

“Products (and services) are a means of accomplishing appropriate actions, interactions, and relationships. In interaction with people, products (and services) obtain their meaning. This is why ViP is interaction-centered.” (Hekkert, van Dijk & Lloyd, 2006). In ViP you first break down existing products and services to find out the interactions it has with the user and to find out what context might explain why the interaction is the way it is. Then the process of crafting a new context starts. Here a broad set of evidence is found. For this graduation study interviews were held and data was gathered to explore the field of community currencies and find interesting factors. The patterns found in the evidence generate a context from which the designer builds a potential future.

Figure 6 shows a visual representation of the method. For this graduation project the designer takes a step back and imagines a future relevant to him and the field. After this, a position is taken in this future world. The position is used to define an appropriate user interaction which fits the context. Only then does the idea generation and detailing phase start.

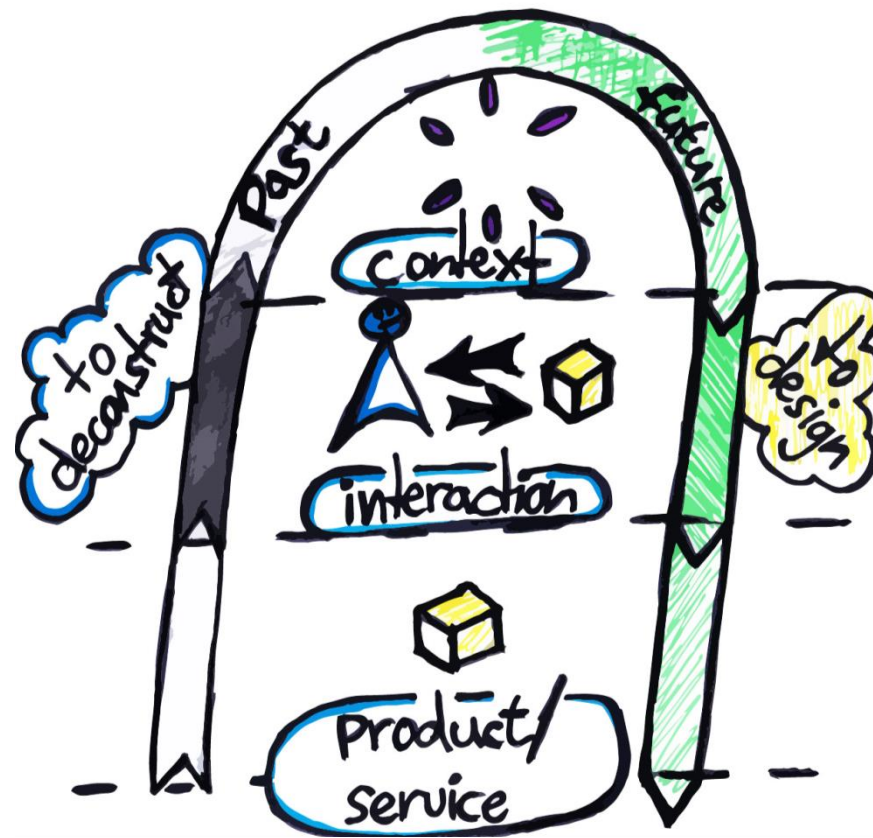


Figure 6: ViP method visualized, based (Hekkert & van Dijk, 2014).

BROAD CONTEXT

In the following chapter the key insights found in the domain Community Currencies are used to sketch a potential future (See Figure 7 on the next page). This future is a source of inspiration and a guideline for the design. The creation has to fit into this future to remain relevant over the years to come. To get more detailed information about the visual in the center of the figure on the next page Appendix XVI can be consulted.

THE FORESEEN FUTURE WORLD

Equalization is the best way to describe the shift happening towards the imagined future. The world moves from a hierarchical into a more equalized one, organized from the bottom upwards. There is a tendency towards a single global culture as a result of the interconnectedness provided by the internet and media. Another factor that seems to play quite a substantial role in the equalization is freely available knowledge. There is always a way to check whether something is true. This is important because hierarchy is to a large extent built on expertise and knowledge. A good example is the teacher which used to share the knowledge in his head. More recently students expect a facilitating attitude due to the available information.

The downside to this information overflow is that that everything seems to have priority and it is easy to get misinformed. The feeling that everything can be important makes it harder bring focus and act. But the internal desire to keep grip on life makes people hold more tightly to some specific evidence. This in combination with a desire to remain unique, despite of the emerging global culture, can lead to stronger organization for local needs.

Free flowing knowledge with digital tools makes it easier for individuals to take action if they wish to do so. This gives space for smaller organizations to emerge and remain relevant. Bigger organization can have problems to stay connected to the people they serve, with open information there are also many opportunities for mistrust and comparison.

With an increased number of groups that have different interests come raising conflicts, especially when it is hard to oversee the bigger picture. Avoiding these conflicts will be an increasingly bigger part of our lives and there are many opportunities in orchestrating the world's knowledge.

Currencies and other price-change mechanisms can work as a prioritization filter, which help to stimulate positive behavior that is not automatically valued by free market mechanisms. With price change mechanisms individuals are directly impacted to act upon a topic with a long term orientation. Currencies can be a good mediator for conflicting concerns; it helps to strengthen the local values and can potentially bring these local values across the boundary of people that directly know each other. In terms of making the 'right' choice, currencies that take into account multiple interests at the same time, can give the user the feeling they are making a smart choice. Education is crucial to convey such feeling.

DESIGNER'S POSITION

I find it extremely valuable for people to experience a sense of belonging groups can offer them. Smaller groups have the potential to spur innovations and allow for quick learning. These are the elements I would really like to encourage. There is however a risk that a world structured like this lacks the ability to organize for themes that do not directly concern an individual or the group. Topics such as sustaining food supply, global warming and disease prevention are examples of topics only indirectly concerning us all (Sonn & Fisher, 1998). I think that by encouraging the use of abundant resources the chance for conflicts will decrease and global concerns are better addressed. This approach would go hand in hand with the emerging context. To align with this future we should rewire our economies from a 'resource' to a 'source' orientation. I say rewire because scarcity is an important element of the economy for the pricing of goods and services. A change towards abundance can turn out to be a quite bumpy (financial) ride but there will always be some form of scarcity left to keep the use of money as a medium alive (e.g. time). Abundant sources allow individuals to build confidence in sustaining a fulfilling life.

The action I want to take as a response to the imagined future world is formulated as follows:

"I want people to experience encouraging confidence by tapping into abundant sources like human relationships, knowledge and the energy of the sun in a demanding world."

TOP-DOWN
HIERARCHICAL
NATION ORIENTED
SCARCE KNOWLEDGE

"AT THE TOP THEY SEE
WHAT'S BEST FOR ALL
OF US"

COUNTRIES OF
THE PAST

FREE FLOWING KNOWLEDGE
NATIONS LOSING GRIP
EMPOWERMENT
TOOLIFICATION

BOTTOM UP
GLOBAL CULTURE
LESS HIERARCHICAL
'SMALL' INTERCONNECTED WORLD

EQUALIZATION

LOYALTY
SHARING
TOGETHER
SIMILARITY
SMALL = POSSIBLE

LOCAL

Egalisation drives people to find groups
that fulfill their *desire to be unique*

Lacking capabilities to
organize for global
topics

LEARNING
TO COPE WITH
THE NEW
REALITY

Increased resilience
due to distributed power

Increase of groups
results in more conflicting
interests, this raises overall
level of tension.

CONFLICTING
CONCERNS

Focus on people that have
made the 'right' choice

MAKING THE 'RIGHT'
CHOICES

Assumption there is a
universal truth

CONDENSED FUTURE WORLD

No need to
be dependent

OPT-OUTS

Having trouble with
the 'universal' truth

THE 'RIGHT' IN
ANOTHER LIGHT

"YOU CAN ONLY
REALLY KNOW IF
YOU EXPERIENCE"

Figure 7: Overview of the general future context of community currencies and other prioritization tools

INTERACTION

From here on we step into action, realizing that a large step backwards was taken in order to generate the future context. In the next chapter the desired interaction is defined and a focus is brought from currencies to a more specific domain. The action statement defined for the context is translated into a desired user interaction. This is done to make the efforts on the design phase more meaningful.

The encouraging confidence that I would like users to experience can best be realized if people feel motivated to undertake action (encouraging). In combination with all the things that could provide them with confidence such as connecting to others, having a safety net and their progress confirmed. Group effort is seen as a crucial ingredient to motivation. It helps to collectively work towards a goal and keep each other motivated on the set course. This feeling of building together and working towards a better state of things is the mode I have tried to catch in the interaction. It fits a future context in which more initiative is demanded from the individual. Cooperation allows coping with the pressure together. The group is a means to create structure and find purpose in the future world.

Based upon the intentions set in the previous section I chose “Constructive Empathy” to be the desired interaction. For me its meaning is to ‘Continuously find the common ground and use this to work towards greater confidence in self and others.’ As a metaphor for the interaction I would use “It is like building a hut together when the plan is clear and the end is near”. Here the abundance is represented by the imagination of children while they use what they have to build something great. Something has to be created where they can all feel at ease. It often goes under supervision of a more mature person which is there to support along the way. This metaphor is made visual on the next page (Figure 8). The interaction is used as a source of inspiration and reflection for ideas generated in the stages to come. The types of emotions that seem to be suiting the interaction are curiosity, sympathy, care and pride.

I preferably want people to experience the product or service physically and give them the ability to build empathy in face to face contact with others. This can strengthen the overall experience so it can create memories with a larger and long lasting impact on the individual.

The product/service qualities that can bring this interaction alive are:

- Encouraging & appreciation
- showing abundance
- Reassuring & guiding
- Allowing users to give and take responsibility
- Allow for better cooperation
- The product or service should be able to take some blame in order to smoothen conversations

I would like the product or service to be an extension to the user’s physical personality. This gives stronger sense of ownership and courage. To keep it surprising over the long run it should leave flexibility for users to share and use it in their way. But at the same time it should bring structure which makes the interaction more fluent. Preferably the service allows users to coach each other; this strengthens their bond but also the connection to the product or service. In the end the interaction and product/service qualities are aimed to align personal and social/societal goals. People should feel personally triggered to act upon societal challenges and be proud on the positive difference they make.

The following product/service characteristics could help to form the desired qualities:

- It should be like receiving a gift
- Give the user overview of the possibilities
- Explain the concept like a story line
- Actions taken have immediate effect
- Customizable to match desires and needs
- It is visible and can be used as a conversation starter
- Questions related to use should have an answer rapidly



Figure 8: Visualization of the interaction

FOCUS AREA

To generate concrete ideas; the efforts are focused on a more specific topic, namely family life. In this chapter it is argued why this search area has been chosen. We take a closer look at the life of a family and imagine the future of family life within the grand scheme of things (see Figure 10).

After considering a range of focus areas such as food, local associations, self-sufficiency, travelling, relationships, office life, celebrations etc. it was decided that family life worked well together with the set interaction “Constructive Empathy”. The theme resonated well since it appears to strike a good balance between focus and being too general. The results of the questionnaire executed for this research (Appendix VII) indicates friends and family to be among the most meaningful groups in people’s lives. And that there is room for platforms or products that make groups share a common goal. A majority of the interviewees indicates that they would like to get more socially involved and increase their contribution to society.

FUTURE CONTEXT

After picking this focus it is important to obtain a deeper understanding. Figure 9 has been made to map the activities in and around people’s homes. The next step was to find factors related to family lives which are currently changing or essential to its existence, this overview can be found in Appendix XII.

FUTURE

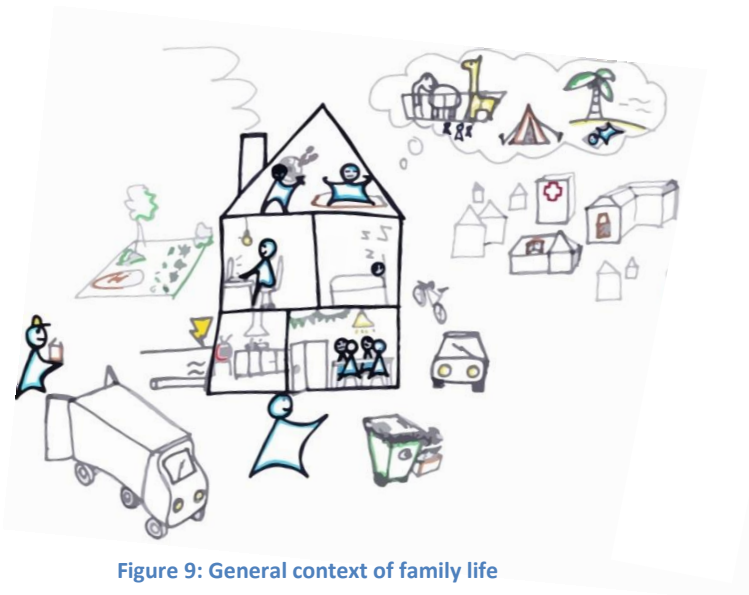


Figure 9: General context of family life

In general a more diverse composition of families is noticed. The new normal is not the standard family that comes to mind with a mother, father and two children with the father as the head of the family. In fact the new standard is a mix of family compositions. Examples of these changes are children with single parents and extensive support of other family members or friends. The gender task division between parents has become more equal, so do the relationships among other family members (JWT, 2014).

In Figure 10 you see how the future for the family life context is imagined. Understanding the context helps to create products and services ready for this future context (See chapter ‘ViP Method’). At the center of the future context are the mixed families. Due to divorces, LAT relations, single friends, a more equal gender task division, help of grandparents and neighbors; families as we used to know them change into tribes.

The desire to remain a ‘normal’ family is projected to make these family tribes enjoy a high standard in family values. As an effect of the family values ‘local’ and ‘home’ become more important over the years to come. People have to learn to cope with the new context which will at times be difficult. These self-crafted families bring increased focus towards ‘finding the right people’. People want to discover a sense of belonging and can find pride from these unique self-created families.

Children feel restricted by this ‘cozy’ community and are overwhelmed by obligations from raising expectations; they feel a pressure to perform. This in combination with the changing families leads them to seek adventure and escape the pressure. In time they probably find out that their family wasn’t too bad after all but in the meantime this is important to consider.

From this context it is derived that good products and services, ready for the future of Family Life, require designers to consider the conflicting desires of parents and their children, take into account a range of family compositions in their offerings (e.g. accounts for divorced couples), help individuals in their search for the ‘right’ family and provide opportunities for drop-outs to reconnect.

"THE GRASS IS GREENER ON THE OTHER SIDE."

FAMILIES OF THE PAST



DAD HEAD
MOM CARES
MULTIPLE CHILDREN

MIX UP

SINGLE FRIENDS
DIVORCES
GAY PARENTS
CAREER

NEIGHBORS
GRANDPA & GRANDMA
LAT RELATIONSHIP
GENDER DIVISION



Tribes emerge when multiple people of different families connect.

TRUST
SAFETY
CARING
SHARING
FAMILY VALUES

LOCAL



become more important, the family tribes *desire to be a 'normal' family.*

FAMILY
TRIBE

FAMILY OF THE FUTURE



Children feel over-protected by the new family and pressed by study obligations. Their reaction is to explore.

ADVENTURE
DRIVE

LEARNING
TO COPE WITH
THE NEW
FAMILY

Taking pride in a family you have created

FINDING THE 'RIGHT' PEOPLE

Feeling special together

Can't cope with new responsibilities alone

DROP-OUTS

People having trouble connecting

TAKING IT PERSONAL

"MY GREEN IS THE RIGHT GREEN."

Figure 10: Overview of important factors in the foreseen future of Family Life.

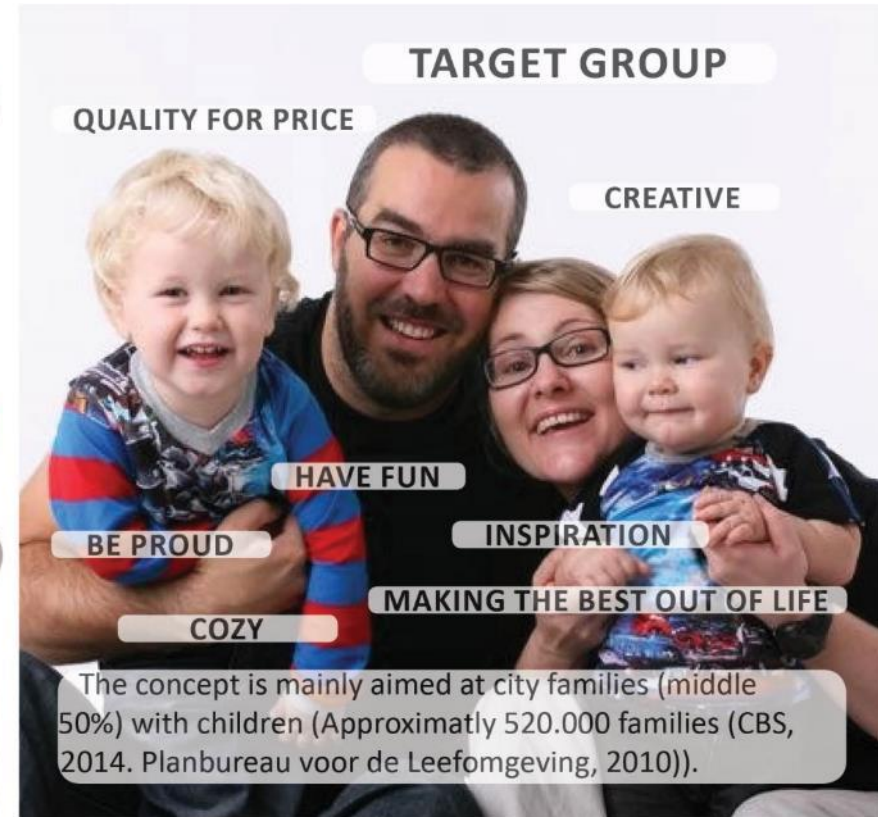
CONCEPTS

UDONATION (DIY)

People share their creations and teach each other how it has been made. UDO is a currency created as a compensation to the costs users have for their creations. UDOonation allows people to share clever ideas. Euro donations given for the items are distributed over all UDOs in existence. In this way money is redistributed and the efforts rewarded. With UDO you do.



Users indicate what their creation costs are. Others confirm or adjust the estimated costs and the maker gets rewarded with a currency (UDO's) this is directly related to the costs or DIY investments. UDOonation allows people to show their clever ideas. People can take a look into the family lives of others. As a user you can get inspired by the content on the website and search on single items you would like to reuse. Making a product rewards you and the inventor with part of created currency. You are asked to make a donation for the item; the legal tender that has been donated is divided over the UDOs in circulation, like a dividend. You have to send in a unique picture of your creation to confirm that you actually made it. Additionally users can buy manuals, use it as currency for making transactions, obtain UDO voting rights or sell it to others for legal tender.



Recycling is stimulated in this service, it gives UDOs without the related costs. The donations received for the community can be shown as personal achievement; users can be ranked on this. Donations for items contribute to the DIY movement. UDO buyers can speculate on the growth of this movement. UDOonation can be an interesting means to redistribute money globally. DIY is fun, personal and with UDOonation surely no waste of time.



Figure 12: Concept 10 UDOonation

PLANET SAVE

By providing children with a pocket-money bank account they can learn the benefits of saving money. By connecting the savings put on the service to sustainable business or projects they can also learn how to 'save' the planet. This is aimed at parents who like to provide their children with a good financial start in life and a learning by doing experience.



TARGET GROUP

Parents (wealthiest 30%) with children under 18.
(Approximatly 550.000 Dutch families (CBS, 2014))

AUTOMATIC POCKET MONEY

MAKE FAMILY PLAN

TEACH MONEY SKILLS

GIVE RESPONSIBILITY

STAY IN TOUCH



The idea was based on the insight; If children keep an amount of money on their account high enough to pay their driver's license, they can receive pocket money from the account with the interest (3%) . Parents could put money in the account on a monthly basis; this can be effective especially at the start of a child's life. With Planet save parents can give their children more financial and environmental responsibility. Savings are invested or used for 'green' efforts. A currency is used in the service to provide the connection between the parent and the child; parents control the settings of this currency. The currency provides children with feedback on their behavior. It is linked to a responsibility level determining the amount of money that kids can take out at a given time.

The interface of the service grows up with the child. Over the years it becomes more mature. Children can adjust their saving and spending milestones and find out whether they can meet the set targets.

Goals such as a driver's license, studying or a game console are events young people would be willing to plan for. Children get the opportunity to put pictures together in a panorama to show off a personal planet on their account and NFC coincard.

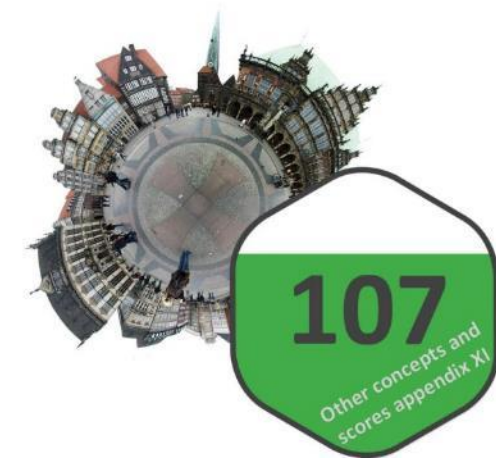


Figure 13: Concept 4 Planet Save

AROUND THE CORNER

By rewarding people for going on holiday very close to their homes, travel pollutions will be reduced and the national economy stimulated. It speaks to the imagination that a holiday nearby can be just as joyful as a holiday on a distant resort. Around the corner offers families a good excuse to stay nearby and spare them from the stress associated with a long journey.

*Prices for the whole family in Euros per night (5 nights stay)



Vlaardingen relaxing camping with many activities for the family. [READ MORE](#)



Spijkenisse bed and breakfast in a cultural city. [READ MORE](#)



Pijnacker camping at the farm, kids can get to know the animals. [READ MORE](#)

SURPRISE SPEND BY TEXT PEOPLE FROM FAR AWAY
THEME PARKS RECEIVE A CURRENCY AS A BONUS
ACCOMODATION GET INVOLVED LOCALLY STORIES

At this platform local holiday offerings and day trips are presented. In this way Dutch holiday accommodations can market themselves locally. A currency is handed out based upon the distance from a user's home; this currency can be gifted to friends or used at a different time for another nearby holiday. The accommodation and other leisure time services (e.g. theme parks, car/caravan rental) can decide to accept the currency and hereby stimulate this local holiday movement. The offerings are sorted on distance to your home, or price including the additional local currency received. Users are given more certainty by an estimation of the travelling expenses.

The platform can be an interesting subject for subsidies because more money remains within the Dutch borders (Sacks, 2002). The currency can also help the service to retain customers. The currency can be donated to people that cannot afford going on holiday; stories of these families will be shared.



Staying nearby can be a great experience with this service. It is a good choice for parents with job obligations during their holiday. Parents can share what they know about the region. Having friends over becomes easy. Some families won't appreciate the extra intrusion but the concept offers them flexibility. Overall families can appreciate what they have around the corner.



Figure 14: Concept 5 Around the Corner

SELECTING A CONCEPT

In the following chapter one of the three concepts is selected based upon factors such as the potential to meet environmental sustainability targets and match with the envisioned interaction. It seems impossible to make a choice based solely on a decision matrix. The matrix helps in making a pre- selection but for the three final concepts it would undermine the richness.

In general the three concepts strike a good balance between individual and social interests (See Figure 16); this makes them promising concepts in terms of financial impact on its target group. There is more to positive impact than the economic impact but financial autonomy can be built from it. For scalable concepts such as UDonation a social element can help unleash its full potential. Planet Save and Around the Corner have relatively social/societal aims but also clear benefits to the individual.

The three concepts all show the users abundance in different ways. UDonation and Planet Save inspire and show available options; Around the Corner is more focused on showing what you have nearby. In terms of the desired interaction Constructive Empathy, Around the Corner and UDonation are preferred over Planet Save because they give the user more space to explore possibilities and get confidence from taking ownership. They also seem stronger at building empathy and creating a common ground between people outside the family.

Table 1 shows the potential of the different concepts to meet the environmental goals which were set. In terms of overall reduction Planet Save scores best with 5,2% of total family output. Around the Corner however shows potential to meet the sustainability goal of 30% on its specific topic, because the journey is almost half of the holiday-emissions. Most of Around the Corner's target audience would not travel by plane with the high emissions related to this, but by compensating for CO₂ realizable reduction can be increased.

UDonation doesn't provide enough potential to meet the targets. Raised environmental consciousness might however lure people to invest in renewable sources. Around the Corner seems to be very capable of promoting renewable investments by making accommodations set an example. The currency is just the sauce over the concept with Planet Save, with the other two it has a more substantial contribution.

Take a look at the last column of the table below; and compare the potential CO₂ reduction per household to the estimated users emissions of a crypto currency. We see that with 3.7% extra CO₂ output the positive impact of UDonation and Around the Corner Would be diminished. Planet Save would lose more than half of its potential reduction in exchange for distributed ownership (See Appendix XIV calculations of crypto emissions).

The final concept which will be worked out is Around the Corner. Besides its potential for meeting the environmental targets and the connection to the interaction it has the following advantages:

- **Low rebound effect** discount is invested locally and/or green
- **Physical in nature** which makes it less abstract, it can sell itself
- **Reaching people face-to-face beyond the family**
- **CO₂ reductions achieved with a single decision**, no lifestyle changes
- **Close match to Qoin's capabilities** which make is suitable for their mid- to long term innovation strategy
- **Distributed ownership is not required**

Around the Corner is capable to use elements of the other concepts; such as stimulating additional renewable investments, fluent transactions and providing users with creative space within the framework of the currency. The impact can be further increased by selecting sustainable accommodations. Overall it fits well into the current product portfolio of Qoin. There are many opportunities to apply their expertise to this service.

CONCEPT NAME	GOAL WITHIN TOPIC (2020)	MAX REDUCTION TOPIC (2020)	REALISABLE FOR TOPIC (2020)	REDUCTION AS % OF TOTAL (23ton CO ₂ /y)
UDonation	Reducing product related emissions (furniture, clothes & other - 7700kg p/y) by 30%*	20%	7,5%	2,3%
Planet Save	Realizing an average total investment in renewable energy of 1275 Euro (Direct energy - 8000kg p/y)**	32%	15%	5,2%
Around The Corner	Reducing Holiday emissions (1840kg p/y) by 30%***	45%	30%	2,0%

* Assumed that DIY for 1 in 5 products in your house is a reasonable limit. It will be hard to engage customers and cheap products allow for higher Rebound effect; 7,5% is estimated as realistic.

** CO₂ reduction used of 2kg per Invested Euro per year (Energie Business, 2014) + Delay of 2 years taken into account to compensate for CO₂ payback time (Seligman, 2010).

*** Maximum holiday reduction retrieved from Dutch CBS (CBS, 2009). For the realizable reduction only families that already went on holiday by car were used (not those by airplane, which are most polluting).

Table 1: Overview of Environmental Sustainability goals per concept

AROUND THE CORNER

This is the final piece of work and one of the last steps in the road to graduation; Around the Corner. Around the Corner is a holiday booking platform that stimulates users to go on holiday nearby. The focus on travelling distance makes a significant impact on reducing emissions because the trip is almost half of the total CO₂ of a holiday (CBS, 2009). In the following chapter the concept is explained and you see how it would look in practice. It is argued why it can make a positive societal impact, on environment as well as the user. On the next page (Figure 15) you can get an impression of the website and the additional services.

At the main page of the website users can search for a holiday based on where they live, from when to when they want to go and with how many people. After this search-action they are provided with an overview of well-priced holiday options nearby. Several interviews were held to improve the first prototype of the platform (You can find the summaries and prototype in appendix XVII). During these interviews with families and accommodations the following benefits were spotted:

- Saving travelling time (especially useful with younger kids)
- Escaping the city
- Booking a short holiday when the weather is good
- Receiving discounts/ low prices
- Giving friends Locals is a nice gift, perceived better than money
- Being good for the planet
- Ability to give children holiday money in a safe and friendly form

Many holiday accommodations use booking agencies or platforms to provide them with guests. The fee accommodations pay these agencies for a visitor ranges between 10 and 20% of the booking price. With Around the Corner the discount is given back to the consumer. The discount is paid back in a community currency called Locals. These Locals are backed by Euros but can only be redeemed for Euros by the accommodations. Consumers can use their Locals in the following ways:

- For booking a new holiday through the platform at another time
- Donate with a 10% bonus to friends without account
- Spend them at the accommodation on services (e.g. food)

Around the Corner keeps 20% of the accommodation's booking revenues in storage. The consumer receives this discount in whole or partly in the form of Locals after making a booking. The amount consumers receive depends on the distance they have to travel from their house to the accommodation. In the following image you see the relation between the two (Chart 2).

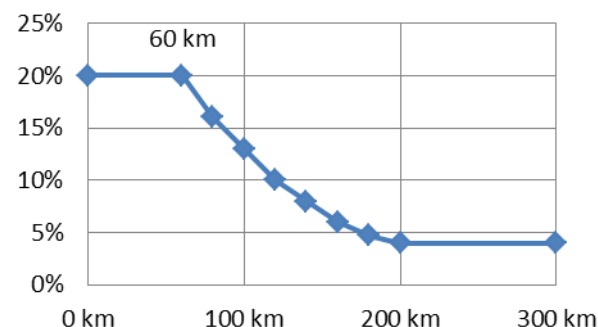


Chart 2: Relation between percentage back in Locals and travelling distance.

The accommodation receives the difference between the 20% discount given and the Locals received by their customers on a separate CO₂ compensation balance in their account. This balance can be spent only on renewable energy sources, LED lights, water saving devices, garbage separation bins or plants and trees in the web shop of Around the Corner. This is done to compensate for the travel emissions and to give accommodations the opportunity to use their discount in a way that pays itself back. Accommodations can sell their services to the users for Locals and earn back the discounts they have given.

The tokens you can find in the bottom right corner of Figure 15 are the physical touch points of the platform. Users receive several yellow account tokens by post; these are all connected to the main account. Tokens can be handed out to their children and friends. With the help of an employee or other visitor with a smartphone transactions can be made to an account token. The red transaction tokens can be scanned (QR) to make a payment. Payment details are shown on the token and in the transaction confirmation. There are also bonus and information cards.

WEBSITE

Figure 15: Overview of the final concept Around the Corner

ACCOUNT

Login/Sign up

Download The App

ROUND THE CORNER

EXPERIENCE THE BEAUTY OF A HOLIDAY NEARBY

NEARBY HOME = MORE MONEY BACK IN LOCALS (€)

OUR PLANET WILL LOVE YOU

Delft

4

from

12-07-2015

to

25-07-2015

HOLIDAYS

ABOUT

ACCOUNT

SEARCH

CART

SORTED: Lowest price including Locals and petrol costs; nearby Delft

22km

20%

€ 67

Relax camping Vlaardingen

€336.00

6km

20%

€ 72

Farm camping Pijnacker

€360.00

116km

10%

€ 35

Farm camping Enkhuizen

€348.00

130km

8%

€ 36

Indiana huts Eindhoven

€456.00

183km

4%

€ 17

Camping Heereveen

€432.00

13km

20%

€ 125

Dune Bungalow Den Haag

€624.00

64km

16%

€ 100

Beach apartment Zandvoort

€624.00

33km

20%

€ 134

B&B Spijkenisse

€672.00

◀ 1/2 ▶

TRANSACTION HISTORY

USER		ACCOMMODATION	
Accounts	Payment	Accounts	Payment
User account		Beach apartment Zandvoort	
Balance:		Balance:	
Swimming Pool	-4,5 L	Settlement March (+€6,20)	-6,2 L
Apples	-2 L	Transaction fee	-0,2 L
Membership fee 2015	-10 L	Swimming Pool	+4,5 L
Locals for booking, thank you!	+100 L	Transaction fee	-0,1 L
Booking with Locals	-22 L	Apples	+2 L
+10% 'Send a Friend' bonus	+2 L		
A friend send you Locals	+20 L		

TOKENS

SET FAIR SHARE

ACCOUNT

Myron Koster

QR

ACCOUNT

LIMIT L 20,00

SET LIMIT

ACCOUNT

John Koster

QR

ACCOUNT

SET LIMIT

ACCOUNT

Truda Koster

QR

ACCOUNT

MEMORY 3hr

PAYMENT

Beach apartment Zandvoort

QR

APPLES L 2,00

SET LIMIT

PAYMENT

Beach apartment Zandvoort

QR

SWIMMINGPOOL L 4,50

LIMIT 10 pe

PAYMENT

Beach apartment Zandvoort

QR

BOAT TRIP L 29,00

ACTIVE 1 year

BONUS

Beach apartment Zandvoort

QR

QUEST HIDDEN 1 L 0,10

MAX L 50,00

SET MAX

BONUS

Beach apartment Zandvoort

QR

ACCOUNT CHARGE L 20,00

SET MAX

BONUS

Beach apartment Zandvoort

QR

ACCOUNT CHARGE L 20,00

MAIN ACCOUNT

RUNNING THE CURRENCY

For this currency to work accommodations should be connected to a cooperative association; this makes an internal accounting system out of the currency. Around the Corner generates income from membership fees of 10 Locals per year, transaction fees of 5% and a 20% margin on the CO₂ compensation goods. The receiving party in a transaction pays the transaction fee. (See appendix XXI for the currency's internal workings) The estimated revenue that the platform can gain from the total booking price is 5% (See Appendix XX for a minimum and expected cash flow for the currency). Overall costs can be kept low when compared to established booking platforms because a limited accommodation offering is sufficient for coverage. Between 15.000 and 20.000 bookings are required though the platform to break even on the investment (costs estimated with a currency programmer). The overall business model of the concept seems healthy. High variable costs add to the resilience and make it possible to run autonomously even with a low number of users. This is especially the case when the system can run without the need for fixed employees.

If users send Locals to a friend without activated account this friend gets an additional 10%. This will be financed by the fact that this credit becomes revenue when the account is not activated for a year. Another small bonus of 1% is given when a visitors helps with making a transaction. When the payment token is scanned a user gets the option to "Help a friend"; when clicked he can scan the account token of the 'friend' and help him to make the transaction.

TO THE MARKET

The first aim should be to get campings and apartments aboard of the platform. These are the best fit with the most likely group of users. The majority of bookings will be for short holidays (when the sun is shining), vacations for people with young children or with less financial means. Later on it can be extended to hotels; first as a trial but scaled up when it has enough traction. The sales pitch to sell the platform to accommodations is that there is no initial investment required and that they can earn back the discount they give away. By providing them with an information package they can train themselves during the low seasons. This package includes guidelines for a session in which they discover the

benefits of using the system in practice, ending with a creative part where they find out how it can enrich the holiday of their visitors. For a lower relative discount accommodations could raise prices of the offering on the platform.

To market the concept key cards with account tokens are handed out at the connected accommodations as a gift to children. If activated the tokens contain a positive balance of 5 Locals. This makes for a marketing effort which requires limited up front capital (only for key cards). The marketing expenses are paid for only when users become active and book a holiday around the corner. Prices on the platform (including the booking Locals) are generally lower than on competing platforms due to the Local discount. Competitors keep a similar discount strategy but hidden from the user.

MEETING THE OBJECTIVES

For users the platform has clear focus and benefits at an individual level while at the same time they contribute to the societal goal of a sustainable planet. So far green accommodation-labels do not take journey emissions into account (Bewust op Reis, 2010). With Around the Corner we can focus on the untargeted 45% of the holiday emissions.

Around the Corner is designed with family tribes in mind. Users can find a way to make the system match any family composition. Offline the platform is very recognizable, unfamiliar users are likely to ask what it is. The downside of this platform is that it is easy to copy. Its more cost effective business model can however help to protect against entry of established booking agencies. Setting up the booking system for the platform will be the most complex part for Qoin; it might be clever to involve a third party if they are able to offer a strong price point for a small number of bookings.

Around the Corner seems to be able to meet the objective to reduce CO₂ outputs by 30%, especially when we compensate for travelling emissions and select accommodations with a low footprint. The accommodations are likely to meet the investment objectives; they require about 8 bookings per year to meet this. It would be great if the accommodations can set an example to their visitors and inspire them to invest green as well.

LOOKING BACK

This is the last chapter of the thesis. Here you find a reflection on the outcome and process of the project. Overall I had a great time working on the graduation subject. It was great to find out in detail how currencies work and what design freedom they provide. It is exciting to see that the concept turned out to be extremely scalable. Transactions Tokens in combination with an app removes the threshold for accommodations to make an initial investment for infrastructure. It makes self-help payment technology available to small accommodations and shops with low costs

I learned a lot about environmental sustainability and that it requires action to be taken soon. I'm wondering if society is really able to deal with the behavioral changes required to stay within the carbon budget. I expect that without discovery of better renewable technologies it will be hard to achieve, especially when nations continue to invest heavily in fossil fuels and put the blame on others than themselves. The issues cannot be solved in competition but through global efforts and cooperation. I like the fact that I now know what actions are effective to reduce my footprint. I can invest in renewables or put money on a sustainable bank, reuse goods, buy second handed, consume less meat, use public transport and stay nearby for holidays.

Community currencies are a tool which is especially beneficial for tackling issues with many stakeholders. It can give a community an identity which aligns them to resolve an existing need. In general it is great to better understand currencies because they can really enrich the toolset of a designer. It is especially helpful when you want to have an impact on a user's behavior. Community currencies can provide the community with freedom within the boundaries of a specific goal; this gives them space to make it their own. In Figure 16 on the next page the concepts are projected over the currency-overview-matrix. The final concepts (red) are positioned around the center, striking a balance between individual and social/societal interest. This indicates potential to have economic impact on a user's life.

I didn't expect beforehand to become skeptical about crypto currencies in the current form, but at this moment it is more similar to investing in stocks than a currency used as a means of exchange. The Bitcoin's energy usage is harmful to the environment. Most of the advantages could be adopted by regular tender. Only if crypto currencies quickly make progress in infrastructure, ease of use, energy consumption and stability it can disrupt legal tender or become a significant part of the economy.

Looking back at the limits of money can tell us that community currencies can have positive influence on some of the limits. It is especially useful for regions where money has become scarce. Some of the created concepts such as UDOnation can contribute to redistribution of money as a force against further concentration. Currencies like Around the Corner can compensate for indirect damage done. I am unsure whether community currencies could reduce a self-sufficient focus and whether it can increase the level of happiness in the long run.

During the process the ViP method has been used. This method forced me to make explicit what I wanted to achieve. In contrast with my expectations beforehand I cannot tell with certainty that ViP was the essential element that has brought me to Around the Corner. I did however notice that the idea phase went quite rapidly because the problem and goal was clear at that time. I do however have the feeling ViP made me a better designer. It demands you to reflect intensively. I now know better what I value as a designer/person. I can use this knowledge for future projects but also to steer my career. So the main advantage I have experienced over other design methods is one of personal development.

I hope to see Around the Corner become reality one day. At the accommodations they indicated that they are willing to give it a try. They are used to try out many options to increase bookings and they were not scared away by 20% discount (appendix XVII). The families were also very positive and I was surprised that the children directly understood how to use it; they said it was super easy. The prototype as it stands now is a viable starting point and could be introduced at the moment the software is developed and the first

accommodations selected. Overall I'm especially proud at the fact that Around the Corner gives consumers the opportunity to make a positive impact on their carbon footprint by making a single decision; to go on holiday nearby.

To conclude, money comes across as something abstract and unchangeable, but community currencies show that it is actually possible to design this medium. If used well currencies can act as an intermediary to better balance the interests of individuals, industry, society and the environment.

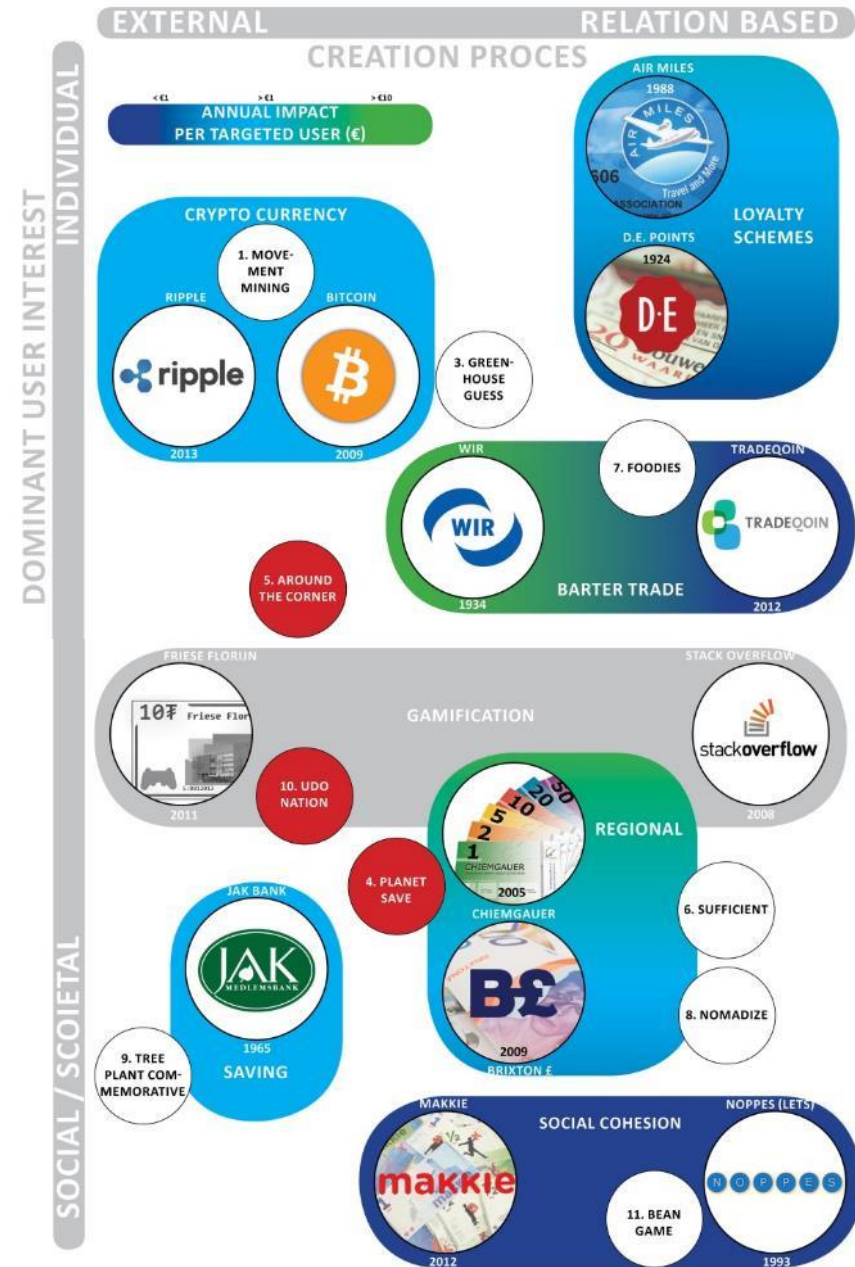


Figure 16: Overview of Concepts in the matrix

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FIGURES

Figure 1: General Timeline With History Of Money, It Is Exciting To Find Out How Community Currencies Shape The Future	8
Figure 2: The Three Basic Functions Of Money.	8
Figure 3: Currency Overview, Currencies Are Displayed Over Two Axes; The Main Interest Users Have In Using The Currency (Usage Driver) And Its Creation Process	12
Figure 4: Impression Of Climate Related Issues That Emerge	15
Figure 5: Overview Of Average Annual Co2 Emissions Per Household In Tons.	16
Figure 6: Vip Method Visualized, Based (Hekkert & Van Dijk, 2014).	17
Figure 7: Overview Of The General Future Context Of Community Currencies And Other Prioritization Tools	19
Figure 8: Visualization Of The Interaction	21
Figure 9: General Context Of Family Life	22
Figure 10: Overview Of Important Factors In The Foreseen Future Of Family Life.	23
Figure 11: Overview Of Different Ideas In Ideation Phase.	24
Figure 12: Concept 10 Udonation	25
Figure 13: Concept 4 Planet Save	26
Figure 14: Concept 5 Around The Corner	27
Figure 15: Overview Of The Final Concept Around The Corner	30
Figure 16: Overview Of Concepts In The Matrix	33

Figure 2

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Figure 3

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Figure 16

- See Figure 3

CHARTS

Chart 1: Renewable investments, cumulative and annual.	16
Chart 2: Relation between percentage back in Locals and travelling distance.	29

TABLE

Table 1: Overview of Environmental Sustainability goals per concept	29
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