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D6.5 - Community Currencies at the boundary between the gift & exchange economies: the ground for business models in Digital Business Ecosystems



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This document sets the foundations of the research on CCs for DEs, and for DBEs in particular. It brings up the major issues that the research will substantially and partly empirically look at in Phase 2 of the project. These are primarily issues concerning the benefits and challenges deriving from CCs for DBEs, as well as the complex interaction that CCs can develop with fundamental elements of DBEs, such as trust, business exchange and the ‘moral economy’ elements of the open source character of DBEs.

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Money is like an iron ring we've put through our noses. We've forgotten that we designed it, and it's now leading us around. I think it's time to figure out where we want to go – in my opinion toward sustainability and community – and then design a money system that gets us there (Interview with Bernard Lietaer, *Beyond Greed & Scarcity*. See: http://www.ratical.org/many_worlds/cc/Lietaer.html)

I. Introduction: Community Currencies task, aim, scope and integration in OPAALS

I.1. Aim and scope of the task

The aim of this deliverable report is to present the activities carried out and the goals achieved in the first 18 months of the Task 6.3 on Community Currencies (CCs) for Digital Ecosystems (DEs)¹. The goals of this task in the first 18 months was to explore and answer the following key research questions:

- How can we understand CCs from a socio-constructivist and language perspective?
- What do CCs offer as an alternative to regular currencies and how would they be able to co-exist in a complex Digital Ecosystem and in Digital Business Ecosystems (DBEs) in particular?
- Challenges and risks of CC viability and sustainability in DBEs: how can a gift economy framework set the ground for CC business models in DBEs?

The task is part of WP6 where socio-economic constructivism aims to develop a language approach for the representation of interdisciplinary research networks as aggregated systems of knowledge production. The contribution of the task to WP6 as a whole relies on the understanding of money and CCs as part of a socially constructed reality and particularly as a type of language, carrying symbolic value of importance to digital business ecosystems. The overall language approach in WP6 is present in this task, focussing on the communicative aspects of currencies and money in general and on its influence on social structures and networks. Thus the task connects CCs to a broader theoretical framework on language, value systems and commitments, arguing in favour of CCs in Digital Business Ecosystems (DBEs) and of business models that are based on a gift exchange ground and under the consideration of the Open Source nature of DBEs. However, specific examples of business models will be discussed in the case-focussed research to be conducted in Phase 2 of the project.

The task began the exploration of community currency systems by initially investigating the available literature and research in the field, as well as by drawing on past and current community currency systems in

¹ In this task, the role of CCs will be approached with regard to transaction type of exchanges for Digital Business Ecosystems (DBEs) and not for all types of exchanges including knowledge sharing that may take place in DEs in general. For the latter, a broader discussion of the Gift Economy and Open Source is more appropriate and is being pursued in other WP6, WP8, and WP12 tasks. However, the focus in this task will be on DBEs and on the prospects and challenges arising for Small and Medium Sized Enterprises (SMEs) that participate in Digital Ecosystems. This will serve best the purposes of the task as presented in this report and will allow the task in Phase 2 to define the scope of the empirical research to be conducted, while taking into consideration the work on trust and regulation carried out as part of the DBE project (Contract n° 507953).

offline and online spaces. It thus sketched the main features of the field and the contexts in which CCs have emerged, while critically reviewing the advantages and disadvantages of CCs with regard to the goal of future employment of alternative currencies in DBEs.

More specifically, the task outlined first the history, principles and characteristics of CCs. Then the ways in which social-constructivism, language and the principles of trust and reciprocity in particular fit into community currency systems were looked at in more detail from a theoretical perspective. More substantially, the possibilities of connecting the CCs idea to previous and current research work on DBEs in particular were considered, discussing furthermore possible risks, challenges, as well as prospects and advantages of the attempt to espouse CCs in DBEs. Finally, some research on the possibilities of and space for business modelling of CCs in DBEs has been carried out, developing and discussing the idea of gifting as a fundamental mode of economic interaction that can best realise the potential of CCs.

1.2 Connections to other workpackages and tasks

This task started as a joint effort between three partners: LSE (taking up the main part), WIT, and UniKassel. However, during the Trento meeting in January 2007 and also during the Kassel General Meeting in March 2007, strong connections to other work packages and tasks were discovered and discussed. The exchange of ideas was mainly based on a discussion paper produced in the first months of the task and uploaded on the Open Knowledge Space (OKS), aiming to provide an overview of the literature and of the key issues arising in a CCs context. Main interesting points and research streams were discussed and agreed upon in a group of OPAALS partners, called Community Currency Group. These points are: money and social constructivism; CCs; language and symbolic forms of power; trust foundations; business agents; Information and Communication Technologies (ICTs); exchange; long-term sustainability.

The task has looked in particular at the principle of trust lying at the core of the potential and advantage of applying CCs in DBEs, while entailing significant implications for regulation and governance models in those ecosystems. The task is thus in close communication with WP4 on Distributed Accountability, Identity and Trust. By looking at models for distributed accountability, identity and trust in DEs that facilitate behavioural and economic collaborations, WP4 has the potential to benefit the task, as the latter may adopt the suggested models in order to strengthen the prerequisites of trust and accountability for CCs. Accountability is of significance for community networks, as it monitors and assigns value to interactions between participants, while constituting a means of providing incentives for participation in the digital ecosystem. Accountability thus contributes to community sustainability and to scenarios concerning gifting and exchange based on reciprocity, on open and free service consumption and knowledge transfer, on trading of service consumptions and knowledge transfer, and on other reward or community currency systems.

In addition, the task has the potential to benefit from the work carried out in WP7 on Community Networks and Digital Ecosystem, as this work aimed to develop policy and business models, as well as incentives,

applications and services – or other sorts of rewards and currencies - that may facilitate the establishment of community networks and the introduction of previously offline regional communities into a digital ecosystem. Finally, the task can feed the work in WP5 which may have enough resources to implement in software the theoretical behaviours suggested in the task, providing thus the project with the required software for the implementation of the currencies proposed. However, this is a possibility for integration with WP5 to be further elaborated in Phase 3 of the project and after the work on CCs has made sufficient progress towards exploring and proposing appropriate economic models for CCs in DBEs.

In more specific terms, the first serious discussion point with other research partners about the potential of implementing a community currency took place in the second half of the first phase of the task. Researchers working in different disciplines and research domains in OPAALS communicated the potential of a pilot application of CCs in the Open Knowledge Space (OKS), since the establishment of an active community space such as OKS needs a reward system where further incentives to exchange knowledge in this space will be provided. That reward system could be in the format of alternative ‘currencies’ that meet the particular interests of researchers, such as research documents, exchange of researchers, research opportunities and chances for researchers to contribute to research outputs, as well as in the format of outstanding research status and entitlements within the community space. The whole idea has relied on the argument that currencies go beyond transfer and exchange units and that the notion of value applies to production of knowledge and to knowledge communities in a broader sense.

That idea was excellent in theoretical terms and strengthened the communication of the task with other research areas in the project, creating the Community Currency Group, where project partners who expressed a particular interest in CCs as well as those who have had some previous research or work experience in the field participated. However, that group has not so far reached substantial conclusions about the necessary mechanisms through which a pilot community currency system could be established in the OKS. Nevertheless, the current lack of mechanisms of application does not mean that the whole idea is not useful, as by drawing on the various ideas and views expressed by all involved partners the task has benefited significantly. The task has benefited in the sense that it has identified challenges, prospects and risks with regard to the goal of employing CCs in an online space where people and bodies with different background and in different domains or disciplines collaborate in order to exchange goods or services of community interest and on the ground of the idea of gifting. Lastly, this initial attempt for pilot application of CCs also brought to the fore questions with regard to the nature of participant individuals or bodies, the particularities of online environments, as well as the nature and characteristics of the specific CCs with regard to the specificities of the community and the interests of the community members.

As mentioned in the footnote on Page 4, however, the research conducted in this task indicates that CCs may be better suited to support business interactions in DBEs rather than more generic knowledge exchanges in DEs, for which the Open Source and Gift Economy approaches seem more appropriate. The rest of this report therefore largely focuses on the former.

1.3 Structure of the document and Phase 2 of the task

As shown in Figure 1, the literature-based conceptual insights gained in the first phase of the task have paved the way for this document to discuss in Section 2 the notion of money from a social constructivist perspective, communicating in Section 3 the importance of looking at money and CCs as a language that through exchange symbols transfers power relations and community ideals. The document looks in Section 4 at the benefits and challenges of community currency systems, drawing in particular on the principles of trust, accountability and reciprocity and arguing that the language used for communicating these principles suggests a range of implications for business actors in digital business spaces.

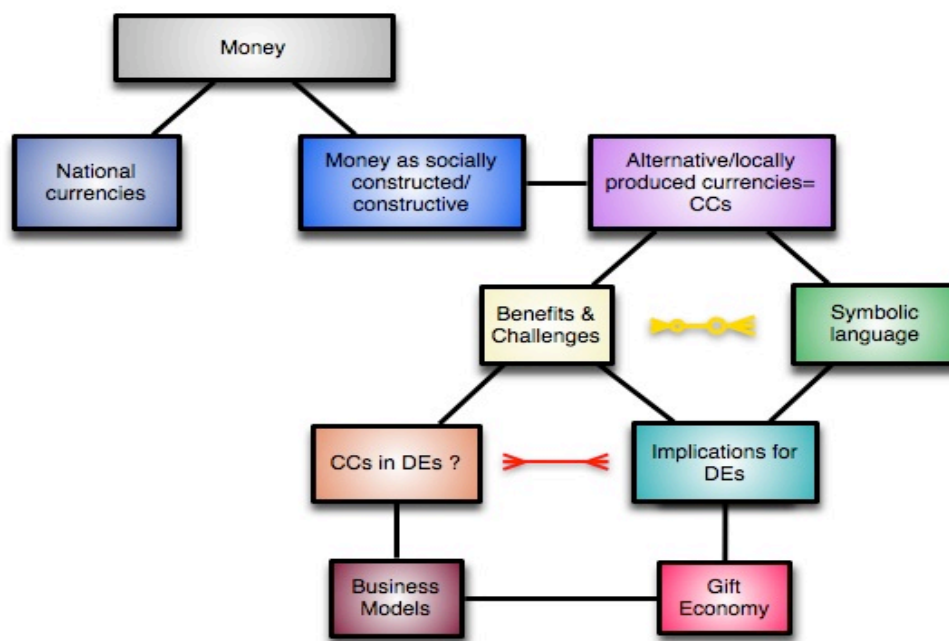


Figure 1.1: Overview of work in Phase 1

These implications are presented in more detail in Section 5, where the importance of CCs for DBEs and the resulting benefits and prospects are discussed into a greater depth. In Section 6, an initial discussion of the available space for business modelling of community currency systems on the ground of a gift economy framework completes the first phase of the research. This deliverable concludes by discussing the significance of building business models for CCs on the basis of the gift economy framework where trust, accountability and reciprocity are facilitated through adopting alternate currencies in knowledge and business communities. Nevertheless, concrete examples of business models will be researched and discussed in Phase 2 of the project.

In Phase 2, the task will be part of WP12 on Socio-Economic Models for DEs and specific cases of relevance to the goal of employing CCs in DBEs will be explored to some extent. At the same time, the theoretical

foundations of the work will be elaborated further and the first thoughts for the implementation prospects of CCs for DBEs will be considered (Figure 2).

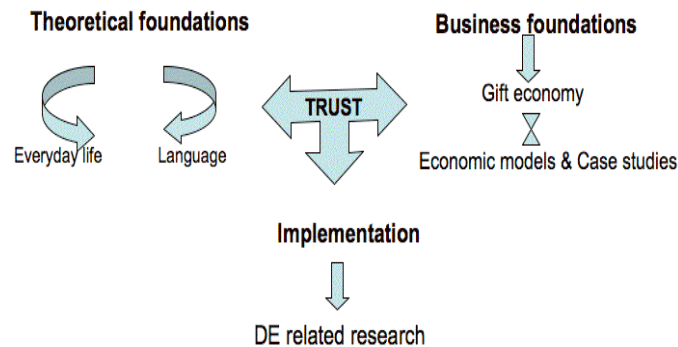


Figure 1.2: Phase 2 and planning for Phase 3 of the task

More specifically, as shown in Figure 2, in Phase 2 the task will develop three main research aspects: a theoretical aspect, with the language foundations primarily and the everyday life foundations secondarily being explored further; an implementation aspect, where an economic approach will be taken and a small number of cases where CCs could be tested and explored to some degree, in order for business models of compatibility with the gift economy to be proposed; and finally, an applicability aspect where further collaboration with other DE related research will be developed, in order to explore ways in which CCs could be utilised and applied in DBEs. The applicability aspect will be looked at further in Phase 3 of the project, while the notion of trust will be at the core of the research, being addressed and reflected by the three research aspects throughout the work.

2. Money and community from a social constructivist perspective

The document begins with a general social constructivist approach to the concepts of money and community, so that CCs are introduced and the appropriate links to the socially constructed notion of language and to the language approach to CCs are built.

2.1 Money, money history & social construction

Money can be defined as goods or tokens used in trade as a medium of exchange, store of value, and unit of account (Menger, 1982). Usually, money refers to currency, particularly currencies with legal tender status conferred by a national state. According to the OECD (2002: 11), money is any object or token which is used as generally accepted means of payment, unit of account and store of value and which enables a society to trade goods without the need for barter.

Money was first in the format of a token of acceptable exchange where individuals, communities and social systems were exchanging various kinds of commodities to which different values were attributed. In the Medieval era, the barter economy model and the community exchange of goods and services in parallel to a broader national economy system were significantly developed. In this barter model, fairly horizontal structure, reciprocity, distribution and trust were established as ground rules, whereas the use of multiple commodity currencies constituted a prototype of today's CCs.

One of the earliest types of money was the commodity exchange systems such as the following:

- The shekel that referred to a specific volume of barley in ancient Babylon;
- Iron sticks that were used in Argos, before Pheidon's reforms;
- Cowries that were used as currency in ancient China and throughout the South Pacific;
- Salt that was used as a currency in pre-coinage societies in Europe;
- Ox-shaped ingots of copper that were used as a currency in the Bronze Age eastern Mediterranean;
- State certified weights of gold and silver that were used as currency since the reign of Croesus of Lydia, if not before;
- Rum-currency that was used in the early European settlement of Sydney cove in Australia.

All commodities used as exchange systems had an intrinsic value beyond their use in exchanges, whereas nowadays paper notes are only worth as much as the monetary value assigned to them. In this sense, fiat money issued by a central authority (government) is a new money object imposed as a medium of exchange by law, having no intrinsic value and being used as:

- Medium of exchange - an intermediary used in trade;
- Unit of account - a numerical unit of measurement of the market value of goods and services;
- Store of value - to be saved, stored and retrieved.

The fundamental shift from commodities to fiat money highlights the social constructivist character of money, as money is assigned value on the basis of how it is understood and used within society and in the same way in which ancient exchange systems used to assign value to goods: ‘money has become a form of social information, something of absolutely no value in itself that we use to measure how we value other things, including our time’ (<http://www.openmoney.org>). Nevertheless, even if objectively money has no intrinsic value, we still implicitly and by a consensual process tend to assign intrinsic value to it, probably influenced by how money originated.

Social construction is viewed as a process that dominates the overall social reality. More specifically, Berger and Luckmann (1966) argue in *The Social Construction of Reality* that individual and collective identities interact in a social system form, being involved in reciprocal roles played by those identities in relation to each other. Nevertheless, this reciprocity cannot be considered out of context, as a process of institutionalisation takes place and meanings are embedded in society. Knowledge and people's perceptions of reality become thus embedded in the institutional fabric of society, with reality thereby being socially constructed: ‘reality is socially constructed...“reality” is a quality appertaining to phenomena that we recognise as having a being independent of our own volition....“knowledge” [is defined] as the certainty that phenomena are real and that they possess specific characteristics’ (Berger and Luckmann, *ibid*: 13).

The argument that social reality, in general, is socially constructed constitutes the core of every social constructivist approach. However, contemporary works on social constructivism indicate that Berger and Luckmann's work on social construction has been extended by researching evolving areas of social reality where social objects, phenomena, behaviours, beliefs and knowledge are also approached from a social constructivist perspective (e.g. Hacking 1999; Bhaskar et. al's Transformational Model of Social Activity). Thus, Ian Hacking has argued that there are several versions of social constructivism, depending on the degree of commitment to its philosophical and moral assumptions (1999: 19-34), and only few, if any, ‘universal constructionists’ (1999: 24-25), in the sense that natural phenomena or matters that lie beyond certain human control and knowledge (e.g. genetics) are considered as rather non-socially constructivist. Also, Hacking (1999: vii) says that there is an ideological load to ‘social construction’, as ‘the phrase has become code. If you use it favorably, you deem yourself rather radical. If you trash the phrase, you declare that you are rational, reasonable, and respectable’.

On the one hand, social constructs include experienced items and facts in social settings – games, **money**, school grades, titles, governments, universities, corporations and other institutions. This is to say that among the vast range of social constructs that constitute social reality, it is worth noting money which has been given certain definitions over time and for which empirical evidence of existence can be provided in many and socially framed ways: ‘There are certainly many things, and facts about them, that are socially constructed in the sense specified by this core idea: money, citizenship and newspapers...**Money**, citizenship and newspapers are transparent social constructions because they obviously could not have existed without

societies' [emphasis added] (Boghossian, 2001: 1-3). Also, social constructivism has been used in contemporary literature to approach technological artifacts through the social construction of technology (Bijker, Hughes and Pinch, 1987; Bijker and Law, 1992; and Latour, 1987). The argument that the design, meaning and functionality of technology are constantly shaped and reshaped in a fluid and dynamic process of incorporation into society and people's everyday life has drawn researchers' attention. This perspective demonstrates that the position of technology in people's lives does not end in the decision to buy technological equipment and gadgets. Rather, the patterns of adoption and use of technology differ according to people's special circumstances of life, needs, difficulties and desires. Silverstone, Haddon and other scholars (Silverstone and Haddon, 1996; Silverstone & Hirsch 1992; Silverstone, 1994) have extensively dealt with the issue of 'domestication' of ICTs through their appropriation and their integration in users' everyday lives, whereas Silverstone (1996: 223) characterized the whole process as 'a taming of the wild and a cultivation of the tame'.

On the other hand, less obvious and strongly debatable social constructs that are culturally and ideologically embedded include knowledge, language, class, race, gender, religion, childhood, sexuality, morality, memory and reality per se. Especially knowledge has drawn the attention of a large number of scholars, whereas the Transformational Model of Social Activity (TMSA) is a theoretical stream in contemporary social constructivism according to which knowledge is transformed through social processes (Collier, 1994, 141–151). Another debatable social construct is gender, which carries an ideological burden that becomes obvious in the tension between the biologically-constructed notion of sex, the socially-constructed notion of gender and the social movements that attempt to challenge the latter, such as feminism.

As far as less debatable social constructs are concerned and with regard to money in particular, money is social and complicated, full of meanings and implications, and studied in sociology, anthropology, psychology, linguistics and economics. In all disciplines studying money, money is considered deeply symbolic and socially constructed, whereas the continuous presence of money implies its significant role in social reality (Stookey, 2006). This issue represents the two sides of the same coin. Money-value is a social construct, as well as an instrument itself for establishing and developing other social constructs and domains of social activity and life. Economics is part of the social, whereas money can contribute to the development of other social constructs as well. In any case, we need to further elaborate and analyse the circular character of the causality between society and money by examining the approach of social constructivism in more depth and with respect to CCs.

2.2 Community and money serving communities: introducing community currency systems

The quotation that opened the discussion in this document refers in particular to the role of money in community-building and to the importance of putting money in a community context.

However, community is a social reality itself which can take various formats in different times and spaces. The word *community* comes from the Latin *communis*, meaning ‘common, public, shared by all or many’ (Harper, 2001) . The Latin term "communitatus", from which the English word community comes, has been given lots of definitions and functions, while being used in multiple disciplines and for the support of a wide range of arguments. A rather simple and comprehensive definition of community is formulated by Evans who attempts to take a distance from popular idealisations of the notion of community:

The perfect community is...often portrayed as one in which individuals and groups naturally organise themselves to work together to actively shape their shared environment. In reality most groupings which are considered “communities” fall far short of this standard, yet this ideal type of community is accorded an almost iconic status and is seen as the perfect model of neighbourly relations and a state to which neighbourhoods should aspire, by policy makers, writers, and other individuals alike. (2004: 55)

Human communities in particular are distinguished by a common sense of beliefs and perspectives, which shape the community identity and the degree of the community members’ adhesion to the community. Human communities are conventionally marked by three key characteristics: social ties and espousal of common values, engagement in joint action (e.g. economic action), and local scale through living in geographically defined locations or settings (MacQueen, et. al., 2001). The principles of tolerance, reciprocity and trust are particularly important for a community to be sustained in the long term: ‘feelings and ideas are renewed, the heart enlarged, and the understanding developed, only by the reciprocal action of men one upon another’ (De Tocqueville, 1994: 515).

With regard to communities and monetary exchange, some communities have developed their own *Local Exchange Trading Systems* (LETS)² and local currencies, such as the *Ithaca Hours*³, to provide alternative economic growth and a stronger sense of community⁴. Both community and the role of local or community currencies as media of commitment for community members raise the issue of trust. On the other hand, language constitutes a deeply socially constructed reality which can be seen in parallel to money and CCs in particular, since CCs communicate the symbolic power of money differently in different contexts and constitute a driving force of the element of community trust. This links CCs to the gift economy concept and to the idea of business modelling of CCs on the grounds of a gift economy framework, highlighting in particular the role of ICTs and technology if CCs are to be established in DBEs.

All these aspects of CC research are presented in the following preliminary theoretical framework that aims to introduce the substantive part of the discussion in this document.

² Local Exchange Trading Systems were first developed by Michael Linton, in Courtenay, BC. See ‘LETSystems - new money’. Available at: <http://www.gmlets.u-net.com/explore/home.html>.

³ The Ithaca Hours system, developed by Paul Glover, is outlined in ‘Creating Community Economics with Local Currency’. Available at: <http://www.ithacahours.com/intro.html>.

⁴ This document only provides a critical overview of CC systems. Specific instances of CCs will be examined in detail in Phase 2, when specific business models of CCs will be researched and suggested as appropriate.

2.3 CCs: a working theoretical framework

From the above introductory discussion on the social constructivism of money and CCs and before we disentangle the main aspects of CCs in general and with regard to DBEs and future business modelling, it is worth noting that the major literature-based approaches to CCs are normative and ideologically loaded, with a recognisable Marxian flavour. As our research follows a scientific agenda, it is neutral with respect to political agendas. Our aim is to elaborate the distinctive elements of CCs and their potential for integration in the theory and practice of DBEs. Thus, this work necessarily finds points of connection to task T12.1 on the foundations of a theory of associative autopoietic digital ecosystems.

For the purposes of the introductory work reported in this document and due to the various literature fields that the task draws on, a working theoretical framework is proposed in this section. The purpose of this framework is to map out the key literature in the study fields that are of interest to the task and the main research areas that the task will draw on, while pointing to the key concepts in this work and the conceptual links that the rest of the document is going to present and discuss in some detail.

As the following figure (Fig. 2.1) shows, the literature that the CC research draws on in this document provides a range of concepts and arguments that lie within the continuum of two key theoretical traditions of broad applicability: neutrality and objectivism, on the one hand, and non-neutrality and intersubjectivism, on the other hand. The starker colours on the left are meant to connote the greater tendency of the objectivist and naturalist tradition to reach sometimes reductionist conclusions. By the same token, the less defined colours on the right connote the less assertive nature of the conclusions reached by the interpretive or hermeneutic tradition. The concepts of language, CCs, trust, money, economic sociology and DBE lie at the centre of this continuum, with different approaches to each of these concepts and to their interrelations being articulated from an either objectivist or intersubjectivist perspective. Also, the figure illustrates that the conceptual elements across the continuum are interrelated in a vertical way, with CCs spanning the sociology and economics disciplinary domains and with a strong link to language.

More specifically, at the bottom of the theoretical framework depicted below, the task develops a language approach to CCs. In general, language is perceived either as a neutral medium decoupled from the agents it connects, from an objectivist perspective, or as a communication tool that carries cultural values and is itself a product of social construction, from an intersubjectivist perspective. With regard to CCs, this document describes various theoretical approaches to money as an unspoken language, arguing that CCs in particular are related to language through a two-fold link that is presented in more detail in Section 3. Thus, in Section 3 the task argues that CCs, even more than regular national currencies (money), are a tool of socio-economic construction, as they are intrinsically and explicitly value-less, thereby functioning in a more visible and explicit way as media of commitments and operating both as a tool of linguistic communication and as another symbolic language that establishes trust and accountability into the system as a whole.

In the layers above this language framework, we find that CC systems as an alternative currency systems bring to the fore the notion of trust, both requiring and fostering trust between participants and to the system

as a whole. Section 4 of this document presents the constitutive elements of CCs and the key advantages of CC systems in comparison to regular currencies, arguing that CCs lie in between the sociological and economic levels of study. In the horizontal direction of the figure, CCs are considered to lie between objectivist views that approach money as a neutral medium of economic exchange and intersubjectivist approaches that view money as a product of social construction that carries symbols, power, social status and a fictitious value (whose historical origins we have already discussed above). In other words, CCs are considered to lie in between the purely economic and the socio-constructivist account of money, constituting a ‘tool’ of socio-economic construction and development that can be looked at from a systemic and associative perspective. This is because the incentives for CC systems transcend economic motives, being socially (community-level) situated and embedded, and enabled by community-level social interactions.

The analogy discussed in Section 3 of money and of CCs in particular as another language that is the product of social construction and carrier of commitments, and the general attributes and advantages of CCs discussed in Section 4, bring up the key challenge that the task aims to dedicate most of its research efforts to in the next phases. As presented in Section 5 of this document, this is the challenge of how tools of socio-economic construction and development such as CCs can be employed in DBEs, which are the potential advantages and risks to be encountered by such an employment, and how we can view such potential in a realistic and business-compatible manner. Particular emphasis is placed on the challenges and prospects arising with regard to the DBE regulatory framework and the implications for trust and accountability in DBEs; issues that are only introduced in this task and which will be further looked at in Phase 2, where possible business frameworks for CCs in DBEs will be researched and concrete conclusions about the compatibility between the loose regulatory character of CCs and the more formalised accountability, identity and trust architecture of DBEs will be sought.

As part of the discussion of CCs in DBEs and the consequent prospects and challenges in Section 5, this document spares some time to discuss the important role that ICTs play in the vision of employing CCs in DBEs. This is because all major and business-specific examples of CCs to be looked at in Phase 2 are offline (e.g. WIR), operating at the local level and without the mediation of an Internet-based software infrastructure.⁵ This is a challenge itself, as CCs in DBEs could operate as digitally-mediated currencies, being provided with the opportunity to move beyond the local level, shaping online community interactions and being, at the same time, challenged with regard to the potential of establishing trust and accountability among participants if the traditional non-regulatory and loose character of conventional CCs is to be maintained.

Overall, the aspiration of employing CCs in DBEs raises questions with regard to business modelling of CCs in DBEs and drives this report to argue about the relevance of the framework of ‘gifting’ where economic activity is closely linked to symbolic and cultural capital in particular. As discussed in Section 6, the idea of

⁵ We regard the private networks of financial institutions, even when distributed, as presenting a rather different, and generally simpler, set of problems and challenges.

‘gifting’ and its features present a particular interest with regard to the appropriateness of the gift economy framework for business modelling of CCs within the context of open source DBEs. In addition, ICTs matter when looking at the gift economy framework of business modelling of CCs in DBEs, as we will provide examples that indicate that high-tech examples of gift economy models deviate to some extent from the typical gift economy models. This raises questions about how business models for CCs in DBEs in particular can respond to such differences, providing further space for careful case-focussed research of business models in Phase 2.

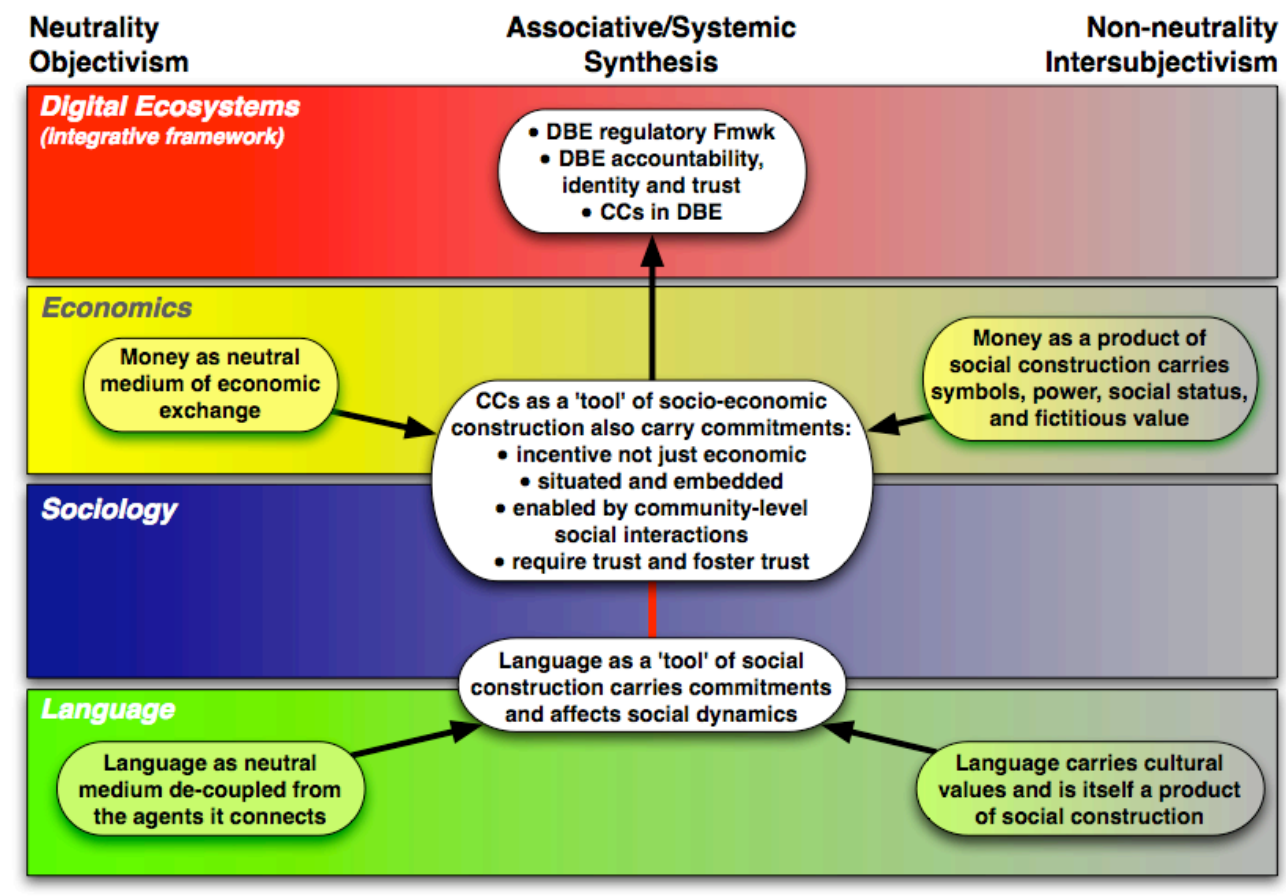


Figure 2.1: Integrative theoretical framework for CCs in DBEs

In summary, each element of the theoretical framework depicted in the figure above will be presented and discussed separately in the next four sections of this report. Although each of these elements is presented separately, an effort to identify the links and interconnections between them will be made in a way that a middle and dialectic approach is achieved and the grounds for an empirically driven study of CC business models for DBEs in Phase 2 is prepared. Therefore, our emphasis will be in the middle ground between objectivist and intersubjectivist traditions in the field.

3. Social construction of money and the foundations of language, semiotics and communication

3.1 Money & Society: economic vs social discourses

By drawing on the above introductory comments on money and its value for communities, it becomes evident that money is not only a medium of exchange and a way to quantify value and carry out economic transactions. Money is part of social life and activity, developing a two-way interaction with the overall societal system. On the one hand, money is used for exchanging or transferring goods, services or even sentiments, whereas cultures and social structures have a very important role to play in the ways in which money is shaped, categorised, ruled, used and evaluated (Zeliner, 1989).

In spite of the evident social character and basis of money, there is particularly little research on the social core of money. Although there is some literature that approaches consumerism in a cultural and historical way (Parsons and Smelser 1956; Rainwater 1974; Sahlins 1976; Douglas and Isherwood, 1979; Horowitz, 1985; Schudson, 1984; Appadurai, 1986; Miller, 1987), the cultural foundations of money itself and of the constitution of the market have not been substantially addressed in the literature. Money is still discussed as an issue of ‘much’ and less as a matter of ‘how’ or ‘what’. As a result, the objectification and reduction of money to something quantitative and measurable, ‘expressing the economic relations between objects...in abstract quantitative terms, without itself entering into those relations’ (Simmel, 1978: 125 & 427), make it much more difficult for us to see the symbolic and social value of money.

The economically driven utilitarian understanding of money dominates, ‘as if it were not sociological enough’ (Collins, 1979: 190) and on the basis of definitions of money as: ‘the most abstract and “impersonal” element that exists in human life’ (Weber, 1978: 86). The field called sociology of money is thus particularly under-developed, with the current literature largely ignoring that money is a ‘réalité sociale’ (Simiand, 1934) and largely developing the instrumental conceptualisation of money as ‘an arithmetic problem’ (Simmel, 1950: 412). Marx (1984: 96) talks about money fetishism as the most ‘glaring’ form of commodity fetishism, warning that money will become a ‘radical leveler’ (ibid: 132) that will allow the ‘equation of the incompatible’ (1973: 163), entailing lack of trust and maximisation of risk.

The lack of sociologically driven analyses of money’s meanings and usages has been criticised by Barber (1977) as ‘absolutization of the market’, as if market itself is free from social norms and cultural limitations. One could go even further and argue that free market does not exist, as people’s decision to do business and exchange goods through money is always culturally and sociologically subject to qualitative restrictions deriving from social elements of reality. Therefore, the economy-driven and out-of-context conceptualisation of money raises questions about the quality of money per se, indicating furthermore the importance of a socio-cultural account of money:

...a qualityless, absolutely, homogeneous, infinitely divisible, liquid object...money is a matchless tool for market exchange...Money is qualitatively neutral; personal, social and sacred values are qualitatively distinct,

unexchangeable and indivisible...But money is neither culturally neutral nor morally invulnerable. It may well “corrupt” values into numbers, but values and sentiment reciprocally corrupt money by investing it with moral, social, and religious meaning. We need to examine more carefully how cultural and social structural factors influence the users, meaning, and even quantity of money. What is the relationship of money as a medium of exchange and measure of utility to money as a symbol of social value? (Zelizer, 1989: 346-8)

What is needed is a contextualisation of money, a ‘sociology of money’ (Parsons, 1971: 26-7) that would allow money to be viewed as a socially founded symbolic medium of social interaction and interchange and among other symbols and social media. Money needs, in other words, to be qualitatively categorised on the basis of social structures, social contexts, social interests and social purposes, in the way that ethnographic studies of the past have shown the existence of different types of money, for different classes and for different purposes. Whereas nowadays economic psychologists talk about ‘mental accounting’ (Lea, Tarpy, and Webley, 1987: 319-42), this needs to go hand-in-hand with a ‘sociology of accounting’ (Zelizer, 1989: 350), which remains applicable and valid. This ‘sociology of accounting’ will allow for different social qualities and restrictions on the usages of money, on the users of money, on the allocation system of money, on the applied control mechanisms and on the sources of money to be identified and sufficiently taken into account (ibid: 351).

To this ‘sociology of accounting’, however, the language approach to money can make a significant contribution, as shown in what follows.

3.2 Language and symbolic power of money

3.2.1 Introduction

As part of the restrictions that social structures and cultures impose on money, language has a very important role to play in the ways that money is linguistically signified, communicated and purposefully used. Money is part of social life, part of our everyday life and activities, as well as a key element of society’s linguistic armoury. On the basis of linguistic tools used in defining and signifying money, different meanings of money are produced and used in different social contexts, determining in particular power relations in various domains of everyday life and activity (e.g. hierarchical relations in the workplace, relations between buyer and seller, etc). Thus language allows for varying social perceptions and evaluations of different types and usages of money to be shaped, influencing significantly communications, systems of material exchange and power strategies applied in society.

A conceptually and theoretically rich approach to money as cultural object should be developed through a semiotics⁶ of culture. The parallel between signs and coins and subsequently between coinage and the

⁶ Semiotics was inspired by de Saussure’s legacy of signs, and the argument that the ways signs are interpreted and the relationship between the signifier and the signified are determined by social and cultural conventions. As far as linguistic signs are concerned, a word means what ‘we’ agree to let it do so. As Saussure argued: ‘any means of expression accepted in a society rests in principle upon a collective habit, or on convention - which comes to the same thing (1983: 68). Semiotics aims at exploring how meaning is constructed and understood, and the power relations lying behind.

linguistic sign are at the core of this work and were originally inspired by de Saussure's *Course in General Linguistics* (1971). On the other hand, there is certain disagreement with approaches maintaining that the monetary system and a coin in particular is marked only by 'internal' and no 'external' (contextual) value (Pastier, 2005). Also, some divergence should be articulated when it comes to claims that 'coins have a value only in exchange' whereas 'signs have a value only in usage' (ibid: 99) for the reason that exchange is a sort of usage as well, whereas even when storing money certain types of individual and societal empowerment can take place. Nevertheless, we accept that in general it is hard to parallel money and language when it comes to 'exchange' or 'debt' terms (ibid: 100).

Hence and although we do not reject the value of semiotics of linguistic signs, we do understand the usefulness of understanding money and linguistic signs as cultural objects, with money constituting a complex cultural object (tool and symbol and work) and having a double semiotic value: numeric (how much money?) and evocative value (power, dominance, control, etc) (ibid).

3.2.2 Theoretical grounds on language and money

Two key arguments have been articulated to support the tight links and parallels between language and money (Wennerlind, 2001):

- Sliding signification of money: money signifies (symbolises) social power, domination, trust, etc (Marxian model).
- Importance of context: money differs in different historical and social contexts, justifying the everyday life approach, where the cultural, societal, economic and political milieus are of importance.

More specifically, the theoretical thread of the argumentation favouring the study of money from a linguistic perspective brings to the fore the following key points (ibid):

- Money communicates not only values of services or goods, but - as a consequence - meanings and discourses (preferences, profit opportunities, trust, etc);
- More importantly, money communicates, transfers and propagates meanings that have power at the centre, namely discourses of power (domination, social power, etc.);
- Language and money have from a speech act theory perspective⁷ a range of commonalities:
 - Both are symbolic systems that serve as means of communication of social knowledge between participants;
 - Both are self-contained discursive systems in which the meaning and experience of a symbol must be interpreted by making references to the system (so as not to be considered out of context);
 - Both are mediated and context-dependent (meanings are constructed differently in different parts of reality).
 - Both are carriers of commitments. Money communicates power relations and certain commitments between humans, while language is a human social action that also carries commitments, in contrast

⁷ Speech act theory argues that language constitutes 'speech acts' in a way that 'to say something *is* to do something, or *in* saying something we do something, and even *by* saying something we do something' (Austin, 1998: 7).

to the rationalistic tradition that presents language as a representation of reality – a carrier of information only: ‘to be human is to be the kind of being that generates commitments, through speaking and listening’ (Winograd and Flores, 1987: 76)⁸.

- From a theory perspective and according to the Marxian application of semiotics with regard to money/capital in the era of capitalism, we can take the following points:
 - Parsons’s theory of money as ‘symbolically generalized media of communications’ (1967: 306). From this perspective, money is understood as a means that communicates value and as generalized symbols on the basis of its utility and ability to elicit **trust** (trust and confidence in its acceptability). So, money is a medium of social relations which communicates values and meanings;
 - Gansmann’s analysis of ‘power relations’ (1988) as standing at the core of money, with money constituting power relations that communicate power disparities and shifts;
 - Marxian theory of money as the supreme representation of social power (power relations between people), as critically discussed by a non-Marxist, Parsons (1967: 229-30). In that sense, the extension of commodity circulation leads to an increase in the power of money where everything becomes salable and purchasable. Thus social power becomes the private power of a private individual, and capital is the measure of social control and power through the empowerment of individual ownership;
 - However, institutional theorizations differentiate the appropriations of money, as money depends on geographical and time distances, pointing to the importance of everyday life settings in which money is appropriated;
 - Money is a partially controllable and globally scalable language, since it is controlled by the state and comprehended in all commodified societies.
 - Hence, money is a form of social power that can be communicated and appropriated universally but not uniformly.

On the basis of the above arguments and since money depends on social relationships communicating various meanings and connotations, semiotics is particularly important for the study of money. Semiotics can capture the sliding significations and contextual dependencies of money (Wennerlind, 2001). Especially with respect to the importance of context, scholars who argue that ‘economic semiosis is a form of writing...because the kernel of economic systems is pure syntax, or formal logic’ (Wallmannsberger, 2001: 174) can be right only to a certain extent, with money being a type of language that serves different linguistic functions on the basis of different foundations from language.

The dialogue or dialectic between money, social structures and language can be viewed from two key angles, an analytic and a pragmatic angle. The analytic angle refers to semiotics and the importance of language in determining signs, symbols and icons. In semiotics, and particularly in Saussure's work (1983), culture itself is described as a sort of language through which meaning(s) is(are) shaped, communicated and evolved. The pragmatic aspect refers to the importance of language as a key communication tool in order for money to be functionally and beneficially used.

More specifically, Parsons views money not just as a material representation of wealth and value, but rather as a shared symbolic language, as a signifier (1967: 358). However, he omits the provision of a cultural and societal account of this signifier, restricting his work to the field of economic activity. Language, on the other hand, allows us to make qualitative distinctions between the same amount of money on the basis of

⁸ In this spirit, the authors argue that ‘without our ability to create and accept (or decline) commitments we are acting in a less than fully human way, and we are not fully using language (Winograd and Flores, 1987: 76).

heterogeneous qualities of money and in tune with criteria of origins, purposes, types, value, legitimacy, allocation and uses. As Zelizer correctly points out, through language we distinguish the different qualities, origins and influences of the following categories of money:

How else, for instance, do we distinguish a bribe from a tribute or a donation, a wage from an honorarium, or an allowance from a salary? How do we identify ransom, bonuses, tips, damages or premiums? True, there are quantitative differences among these various payments. But, surely, the special vocabulary conveys much more than diverse amounts (1989: 351).

Therefore, the task is interested in exploring the analogy between language as a social constructivist process and the symbolic power of money that determines economic relations and shapes economic constructivist processes. There are two additional aspects of relevance to the task: first, it is language itself that communicates and assigns this symbolic power to money, i.e. money is itself socially constructed; second, because the task is particularly interested in the application of these theoretical insights to sustainable socio-economic development, the focus in what follows is not on money in general but, rather, on CCs in particular. Thus the link between language and money is two-fold:

1- ‘money is like language’: money is symbolic and carries information; thus if language is social constructivist, money could be socio-economic constructivist. This is a research issue and it cannot be taken for granted. It just seems plausible.

2- ‘language is like money’: language carries commitments like money does. This link is not as obvious with regular money because by consensus regular money carries a fictitious value, and it is still today linked to gold by a floating exchange rate. CCs are intrinsically and explicitly value-less, thereby exposing their function as media of commitments.

This two-fold link suggests the analogy shown in Fig. 3.1, where the emphasis on CCs is made explicit. This analogy is best understood in reference to the graphical illustration of the overall theoretical framework in Fig. 1.2, as it is meant to rely on an understanding of socio-economic processes that lies half-way between the purely functionalist/objectivist and the radically social constructivist.

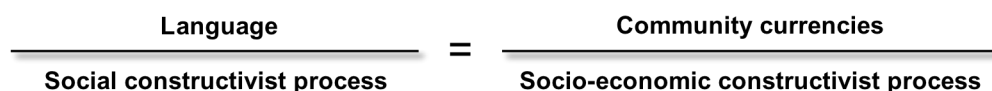


Fig. 3.1: Associative/systemic analogy between language and CCs

Nevertheless, contextualisation of money is of importance, and it depends on geographical and time distances. Even further, money is a controllable and globally scalable ‘language’ that is controlled by the state and a social power that can be communicated universally and comprehended in all commodified societies. At the same time, money is not wealth and although language is a major means towards understanding this fundamental difference, ‘our language’ makes it hard to express the critical difference between money and wealth (Korten, 1997:1).

4. CCs: a critical approach

At this point, the discussion moves on to community currency systems, proposing CCs as an alternative to conventional market exchange economies and to economic risk. This argument will be on the grounds of the social constructivist nature of money and the symbolic meanings that money carries, a meaning that is broadly overlooked in the relevant research and literature. CCs empower significantly the notion of money or currency as a socially founded symbolic medium of social interaction and interchange, since CCs arise as alternative forms of money that constitute another unspoken type of language with important implications for social processes such as trust and community building.

4.1 CCs: history, principles & ground rules

4.1.1 History

Local currency is a currency not backed by national or international economic authorities and not necessarily by legal entities, which is intended to support trade in small areas or communities. Local currencies take place in small-scale, self-sufficient, decentralised urban and rural communities which aim to integrate work, life and the environment. They rely on cooperative division of labour, on personal relationships, as well as on egalitarian sharing of material goods and widespread participation of the members in the community (Solomon, 1996: 28). Local currency is mostly known as community currency, as it is inspired by the notion of community, which in this case evokes the material organisation of a self-sufficient economic entity (Lietaer, 1994: 10).

The contemporary CCs can be traced back to the 20th Century, in Silvio Gesell's vision of money (1929) as a service to the community and to the members of that community through releasing money from interest (Van Arkel and Peterse, 1998).⁹ CCs can thus be looked at in parallel to the notion of 'commons' (Benkler, 2006), whereas their economic advantages have historically relied on the elements of sufficiency of currency supply, of use of currency within the community and of the issuance of currency by the community members themselves (Linton and Yacub, 2006). In that way, the community members produce and trade their products or services within the community, decreasing the degree of the community's dependence on external resources.

Free banking was the economic prototype of local currencies, whereas broadly speaking there are three archetypes of CCs: the Backed Currency, the Fiat Currency (e.g. Ithaca-hours system), and the Mutual Credit System Currency (e.g. LETS) (Schraven, 2001: 3-8). Although CCs have tight bonds with the old, community-based, tradition of the barter system where two parties exchange goods or services on the basis

⁹ Gesell, in fact, goes further by proposing *negative* interest, on the grounds that money should be on the same footing as the objects whose exchange it mediates, such as perishable commodities. It is interesting to note that inflation leads to a similar effect, although a thorough discussion of such macroeconomic indicators would lead us too far from the focus of this report.

of reciprocity and proximity (Croall, 1997: 10), CCs attempt to go beyond developing exchange of ‘alternative currencies’ (alternative notes, tokens, vouchers, etc), goods or services, and skills among multiple parties (individuals usually). CCs broaden the scope of exchange both in terms of parties involved and goods exchanged. Nowadays, company scrip¹⁰ for the payment of workers and tokens issued by businesses to encourage consumer loyalty are the most common forms of local currencies. CCs have become increasingly popular, with over 2500 CCs in 2000 (Lietaer, 2001: 159), whereas some of the oldest known parallel currencies to be in continuous use are the WIR Economic Circle Cooperative in Switzerland, and the Labor Banks in Japan.

Overall, phases of crisis and economic depression lead to the issuance and use of emergency currencies, giving thus the opportunity for countering the general phenomenon of money scarcity. Thus local currencies achieved the initial boom during the economic depression of the 1930s, indicating their importance for economic sustainability within localities particularly in periods of money scarcity and poverty. For instance, the LETS system appeared and spread in different localities of the globe in the financially difficult years of the 1980s and early 1990s. Also, during the Argentine economic crisis of 2002, local governments issued small-denomination interest-free provincial bond IOUs successfully.

Successful examples of local currencies over the last two decades are LETS, set up in Canada by Michael Linton in 1983, and the *Ithaca Hours* paper currency initiated by Paul Glover in Ithaca, New York in the 1990s¹¹. Although local currency systems arrived in Europe some time later, in 1997 there were more than 124 LETS systems in France, 100 in Italy, 65 in the Netherlands and many other in other European countries and regions. Within the European context, though, the UK and the Republic of Ireland have been the two regions where LETS currencies have met the greatest development with more than 450 groups being established by 1997 (Croall, 1997: 14-5). In 2006, the LETSUK agency reports that over 300 LETS systems were established in the UK indicating that there has been some shrinkage since 1997 - if we say that membership averages at 100 per scheme, this means about 30,000 or fewer members in the UK¹².

4.1.2 Principles and ground rules

The following principles and ground rules constitute key characteristics of community currency systems, as well as presuppositions for CCs’ appearance, growth and sustainability.

○ **Trust and accountability: regulation of trust and accountability?**

Trust and accountability (transparency) are fundamental prerequisites for a community currency system’s sustainability and empowerment and for users to benefit from the system’s presence and operation. This relation of mutual dependency and enablement entails that no strict regulation and only a members’

¹⁰ ‘Scrip’ in this context is similar to ‘emergency currency’, namely currency that companies create when they face severe scarcity of regular currency.

¹¹ Since 1991, 2000 people are involved and \$2 million have been traded.

¹² See for more at <http://www.letslinkuk.net/index.htm>.

agreement usually emerge in a local currency context. Thus people base their communication, exchange and trading on mutuality and trust, as well as on the adoption of the same values, with no need for formal regulation and mandatory rules.

More specifically, trust and accountability in CCs are founded and operationalised on the basis of the following principles (LETSsystems – new money. Available at: <http://www.gmlets.u-net.com/>):

- Co-operation and mutual responsibility for the integrity and stability of the network, as no-one owns the network;
- Self-regulation, with the users defining the community rules and regulations;
- Empowerment, as all users are entitled to issue the currency;
- Money as a means of exchange that can take various formats, while being used for satisfying various community-based needs.

Hence, in order for CCs to be sustainable and to operate in tune with the above principles, the following rules must apply (ibid):

- Consent among those participating in the local currency system;
- No interest to be charged on account balances;
- Common ownership of currency;
- Disclosure of information, so that informed action is taken;
- Money issued and spent within the community;
- Money with no intrinsic value or material identity; value is attributed only when money is spent;
- The sum of all debit and credit balances in the community equals zero and money is issued only when it is needed – therefore, neither shortage nor surplus of money is likely to occur.

However, there are instances where the absence of trust among participants, in the absence of firm regulations and appropriate controls, has forced local instances of community currencies to come to an end. Indicative is the case of the Belfast community in Northern Ireland that survived for only three years, as conflicts and lack of trust within the community comprised a huge barrier to sustainability and further development (Croall, 1997: 43). This raises in turn the issue of regulation, as in offline CCs only flexible and non-institutionalised frameworks of rules in the format of agreement among community members apply. The implications of trust issues for regulation and matters concerning community currency systems' governance are to be substantially examined in Phase 2 of the task.

○ **Local scale, diversity & small-sized membership**

Local scope is another requirement and parameter of development for CCs. The whole idea of CCs aims to enhance the sense of proximity and the activities taking place in local life settings, so that the local economy

and community bonds are strengthened through communicating and using local currency exchange and value. Also, on the grounds of locality, CCs aim to benefit people who are socially disadvantaged through creating a sound and solid community framework. This is one of the major reasons why communities that have attempted to expand beyond local boundaries, such as communities in Northern Ireland, have encountered difficulties in terms of administration and transportation (ibid: 45).

In terms of scale and membership size, CCs are diverse, whereas small-scale membership size is considered the most common type, constituting both an advantage and a weakness of what CCs offer and how they can be sustained and expanded. More specifically, there are the following certain three criteria influencing the characteristics of small-sized membership: ‘diversity, relations of proximity, and relations of affinity’ (Cohen-Mitchell). These three criteria point to the parameters influencing the workability and viability of a community currency, determining at the same time its scale and overall character. In that sense, diversity of skills and capabilities, proximity of collaboration and personal contact, as well as affinity of interests, identity and reciprocity operate in the direction of trust and accountability in the trading behaviour within the community context.

Thus, on the basis of the above three criteria and in order for proximity and affinity to be maintained, CCs are of a limited geographical scale and with diverse small-sized membership. This in turn poses questions about prospects of expansion, speed of development, and sustainability. Besides those who conventionally think of these characteristics as prerequisites for the establishment and sustainability of CCs, there are those who consider local scope to be a limitation that makes CCs function mostly in a complementary way, with no large variety of goods and services being traded. According to those views, expansion beyond local scope and inter-trading ‘is an obvious way of providing access to a wider range of goods and services’ (Croall, 1997: 55).

○ **Alternative life-style, ideology & trading**

Overall, people’s traditions, life-style and politics have proved to be of particular importance when a local currency system is established. By drawing on the case of Stroud, which was the first local currency in the UK and was established in the 1990s, we can see that it has had a long tradition of green politics and artistic activity (ibid: 18), facilitating thus the employment of an alternative economic system.

By drawing on case studies of how LETS systems applied to the UK¹³, local currencies introduced initially a different life-style, as:

Many of these groups were started by people active in environmental politics, the green movement or the Green Party. This was certainly the case in Norwich and in West Wiltshire. Others, notably in Stroud and Totnes, were already involved in an ‘alternative’ lifestyle, and were therefore perhaps more receptive to an idea such as LETS that stood outside the mainstream economy (ibid: 16).

¹³ The following community locations where LETS has come into existence in the UK and in Northern Ireland can be mentioned: Stroud, London borough Hounslow and Banbridge in Northern Ireland.

In summary, we have argued that CCs are socially and economically constructed, communicating a language of community power and with money being used as a means of strengthening the sense of community while empowering the individual user. The fact that CCs are found in developing regions of Asia, Africa and Latin America can fuel discussions about this role; such discussion, however, goes beyond the scope of this document. On the other hand, it is worth looking at how such local economies can operate in parallel to the national economic system, as their role is usually complementary to that of the national currency systems, and this role will be discussed in detail in the last section of the document where the ground of conducting business modelling research for CCs will be presented.

4.2 Why CCs? CCs as a socially constructed & socio-economically significant phenomenon

In principle and as briefly discussed in the previous sections of the document, CCs can make up for the money scarcity in regular currencies, while providing underdeveloped regions with important financial opportunities. Users of CCs - either individuals or businesses - can benefit, as they have the potential to attract costumers, to increase case income¹⁴, to encourage costumer loyalty, to facilitate cash flow and to gain a higher profile within the community (LETSystems – new money. Available at: <http://www.gmlets.u-net.com/>).

Nowadays, in particular, the presence of globalisation and the elimination of geographic and time distances have resulted in the establishment of trans-national networks and in the rapid weakening of the traditional community format and spirit, stimulating the emergence of a new movement of CCs. This new movement attempted in the 1980s to revive some aspects of the Middle Ages and of the primitive communities of that time. The three key examples of this new stream of local exchange systems which inspired the creation of many more instances of communities are the *LETS* in Canada, the *Ithaca Hours* by Paul Glover in the USA, and the service-credit exchange system *Time Dollars* by Edgar Cahn (Cohen-Mitchell).

These and all other CCs aim at fulfilling the diverse community needs along with the empowerment of local businesses. An indicative example is the Toronto Dollar project (www.web.net/~tordoll/), launched in 1999 in Canada, with its organizers promising to strengthen the neighbourhood's identity and autonomy, to promote local trade, and to provide locally-generated funds for charities, thus fighting against poverty and homelessness. These community-based goals were achieved through a small difference between the price of selling and buying any product in the community, half of which went to local social service groups. Also, LETS has lately developed a similar model called 'Community Way'. In addition, an offline community currency example that contributed significantly to the development of public works can be found in Curitiba, in Brazil, where in the 1980s that poor city's mayor, Jaime Lerner, decided to introduce tokens through

¹⁴ Case income is 'income per business case'.

which citizens were rewarded for cleaning the city garbage, where the purchase of tokens could be afforded through selling the recyclable garbage to recycling companies.

However, which are the comparative advantages of local or complementary CCs in relation to national regular currencies? On the one hand, the capitalist mode of production and consumption favours the concentration of economic power in only a few hands¹⁵, the ecological destruction and the weakening of communities and ecosystems. On the other hand, CCs resist the overwhelming impact of the capitalist mode of production and consumption through the empowerment of interdependent communities, facilitating cooperation and strengthening democratic processes. Of course, one must acknowledge that there isn't universal consensus on these points. The issues are so complex that we cannot hope to resolve them here. The task takes as a working assumption that socio-economic development in which collaboration, the gift economy (see Section 6), and language processes play a major role is more likely to be more sustainable in the long term than alternative economic models or understandings. Our limited resources are focussed on proving this view right rather than the capitalist approach wrong. Therefore, we can say that, based on the empirical evidence to date, local CCs seem to make a significant difference at the local community level, as they aim not only to achieve economic equality but also to restore human and social capital on the ground of what the normative accounts of CCs tend to call morality and 'by showing how money is backed by our beliefs systems' (Brouillet, available at: www.communitycurrency.org/).

Tackling the last remark on morality, the moral aspect of CCs relies to a great extent on the principle of reciprocity and is compatible with the community's needs and desires. Reciprocity and the satisfaction of community members' needs through interaction, cooperation and real work relieve participants from the stress and risk they undergo in regular currencies where competition and scarcity of resources prevail. Even beyond these effects, some consider that money is not itself the major medium of exchange and that one of the most important indicators of economics health is the presence of an 'active economy of affection and reciprocity' (Korten, 1997: 2) where people conduct transactions not only to serve their own interests but also to support others and the community as a whole. Thus the principles of mutuality, reciprocity, trust and common interest are strengthened in CCs and in the interactions developed among community members, communicating the value of CCs on the grounds of a common language of morality and ethos.

Lietaer (1994) summarises the above benefits by proposing CCs as the tool for resolving three issues of economic, political and societal interest: unemployment, environmental destruction, and community breakdown. What is argued is that CCs enable people to work on 'alternative' tasks through exchanging services and locally produced goods and while encouraging recycling¹⁶. Lietaer (ibid) thus approaches CCs from a social constructivist approach, arguing that economic motivation and activity go hand-in-hand with desirable and ethically correct behaviour. Lietaer maintains that the functionality of CCs is based on moral

¹⁵ In the article 'Money Versus Wealth', Korten remarks that '...450 billionaires have combined financial assets greater than the combined annual incomes of half of humanity' (1997: 1).

¹⁶ They happen thus to be particularly popular among many green and sustainable living groups such as the UK Green party.

human behaviour, in terms of principles, and on the money attributes of ‘standard of measure’ and ‘medium of exchange’, from a practical point of view. Other money characteristics dominating national currencies, such as money as ‘store of value’, ‘tool for speculative profit’ and ‘tool of empire’, do not apply in CCs. On the other hand, Lietaer (ibid: 11) makes clear that CCs are not typical welfare systems, as they don’t transfer any resources but they rather create the resources on their own through work and exchange among participants. Also, they are less susceptible to inflation, as they are partially independent¹⁷ of the national currency and link otherwise unused or idle resources to unmet needs and only to such needs.

However, local and national currencies can co-exist and harmonic co-operation of national currencies and CCs is both possible and desirable. On the basis of the following figure (Figure 3), complementary local currencies promote longer-term planning and encourage trade and cooperation, as they are in sufficient supply and no interest applies. The fact that no interest accrues means that the economy of debt and transfer of wealth to only a few hands is not likely to arise since each individual gains more by spending the local CC than by ‘hoarding’ it. As a consequence, a more equal distribution of wealth is achieved. CCs are also backed by an external reference – commodity or service – rather than a central authority, being thus less subject to inflation. In that sense, CCs seem to benefit the communities of their users by off-setting money scarcity, inequality, unemployment and debt.

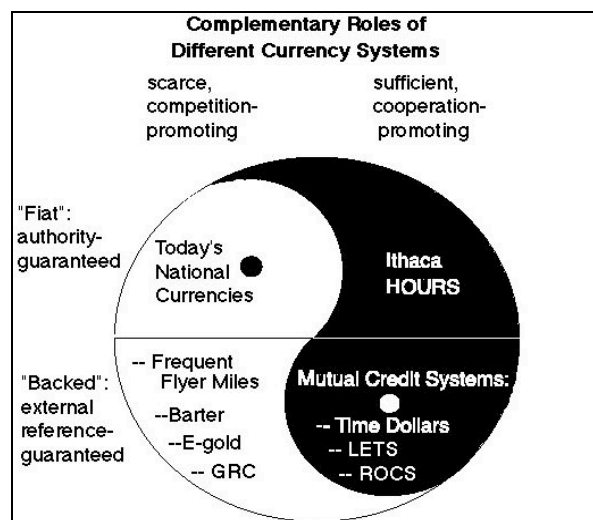


Figure 4.1: Transaction.Net, *Complementary Community Currency Systems and Local Exchange Networks*.
Available at: <http://www.transaction.net/money/community/>

Nevertheless, to the question why there is a need for CCs and what this alternative ‘money’ has to offer in juxtaposition to regular currencies, trust comes to the fore as a strong answer as well as a prerequisite for CCs to be established and sustained, as shown in the next section.

¹⁷ Different community CCs in different contexts show different levels of dependence on national currencies.

4.3 Trust in CCs: foundations & factors establishing trust

The following argument encapsulates only some of the key comparative advantages of CCs relative to regular national currencies, with ‘trust’ being placed at the centre:

Some communities are coming up with an abundance of creative alternatives to conventional money, in the form of local money systems and complementary currencies, based on **trust, time, and the wealth of energy and skills in communities**. This is a form of ‘money’ that makes a change, and that offers new opportunities for sustainable development, North and South [emphasis added] (Seyfang, 2001: 60).

Which are, however, the foundations of trust in CCs and the factors enabling the establishment of trust relationships in community currency systems?

4.3.1 Foundations of trust in CCs

The fact that CCs are not used for storage or for profit but only as a means of exchange and a standard of value communicates a language of currency value that discourages dishonest behaviour between participants and underpins trust through morality¹⁸. In CCs, it is not money that values people, but people value each other by using money that is not scarce (LETSystems – new money. Available at: <http://www.gmlets.u-net.com/>).

More specifically, one could refer to the following foundations of trust in CCs, such as scarcity, accountability, scale and structure:

- a. Scarcity: regular money is scarce and the aim to create money that you can trust completely is a very expensive tool to use if you already trust the people you trade with. Trust and scarcity intersect, and local communities that use CCs are able to maintain trust, as local currencies are not scarce. However, scarcity is relative, since the value of money always adjusts to the relationship between money supply and available products and services (<http://burlingtoncurrency.blogspot.com/2006/04/ripple-pay.html>)¹⁹.
- b. Accountability: trust is a term that becomes entangled with accountability. Accountability can be more easily ensured at the local scale, for example in a community where the chain of responsibility is more transparent. So, if the community enjoys some level of prosperity, the participants are inclined to trust that products are not flowing out of sweatshops (ibid).
- c. Scale: trust also depends on scale, and the community currency system in Argentina called RT is an indicative example. The community currency system in Argentina initially was an answer to the scarcity of global dollars and gained trust because it provided an alternative to the big money interests. However, when the system became so large that the RT turned into a national currency, then

¹⁸ Although ‘morality’ sounds normative, it comes up quite strongly in the relevant literature as an element of the ideological armoury of CCs. Therefore, I use in this document the concept of ‘morality’ wherever it is appropriate, without, however, implying that the task will adopt uncritically a normative and ideologically loaded vocabulary as part of its conceptual arsenal.

¹⁹ This means that the value of money decreases or increases depending on the relationship between money supply and products/services available, determining the degree to which money is scarce or not.

accountability was lost and the system began to collapse due to the decreasing amount of trust in the system (ibid).

- d. Structure: The structure of CCs both requires and fosters trust to be established. CCs are usually issued by a non-profit organisation whose members are chosen from the community. In addition, there is no interest paid to those people, so the community will not be indebted to them, whereas the real labour of the community members who are willing to accept the currency empowers the community and the trust among members (Powel and Salverda, 1998).

4.3.2 Trust in CCs: factors establishing trust

With respect to the argued benefits that CCs bring, these currencies contribute to: ‘...local regeneration, build social capital and foster sustainable development’ (Seyfang and Pearson, 2000: 56). In order, however, for local currencies to provide those benefits, trust comes to the fore as both a prerequisite (Henderson, 1994) and a benefit of using local money.

CCs contribute significantly to the establishment of trust among participants exchanging goods or services through cooperation, reciprocity and satisfaction of community needs and desires (Korten, 1997: 2). CCs have through trust the potential to retrieve the social, human, natural, institutional and business capital being lost in today’s world economy (ibid: 3-4). In this sense, CCs are considered almost ‘anti-money’ (Bakshi, 2001). This money is regarded as a practical source of trust, with trust relationships being restored and validated in transactions. Arguably, this language of currency value is what creates communities, and communities are what establish and empower trust in transactions and beyond transactions and through alternative money (ibid). Therefore, CCs are supported by critics of regular currencies who point to the importance of trust and to the crises of government-issued money that make people lose their trust in the economic system and in one another (Tangwisutijit and Rojanaphruk, 2000).

By bringing to the fore more specific examples, Paul Glover (1998) talks about the way in which trust and human contact have made the Ithaca’s Hours one of the currently most successful CCs:

Tens of thousands of purchases and many new friendships have been made with this cash, and millions of dollars value of local trading has been added to the Grassroots National Product. We printed our own money because we watched Federal dollars come to town, shake a few hands, then leave to buy rainforest lumber and fight wars. Ithaca's HOURS, by contrast, stay in our region to help us hire each other...HOURS reinforce community trading and expand commerce which is more accountable to our concerns for ecology and social justice...Residents are proud of income gained by doing work they enjoy. We encounter each other as fellow Ithacans, rather than as winners and losers scrambling for dollars. The Success Stories of 300 participants published so far testify to the acts of generosity and community that our system prompts. We're making a community while making a living...Yet our greater self-reliance, rather than isolating Ithaca, gives us more potential to reach outward with ecological export industry...Ithaca's money honors local features we respect, like native flowers, powerful waterfalls, crafts, farms and our children...Local currency is also lots of work and responsibility.

According to the above statement, social and environmental responsibility; community trading and commerce; marketplace time and skills not employed by the conventional market; income gained by doing work that people enjoy; generosity and community building; self-reliance; ecological industry; and money

that honours local features and it is fun and legal are considered to be only some of the characteristics and principles that make CCs an important social and economic addition, establishing trust and morality among participants.

Another example of community currency where trust is guaranteed is the WAT system used in Japan. The WAT system allows participants to issue their own tickets (IOUs), which are used as a complementary currency in the community on the basis of self-guaranteed trust. Trust is based on the community itself, whereas self-regulation has made the WAT community one of the most trustful and successful among small well-established businesses in Japan (Andron & Lietaer, 2006).

4.4 Risks and challenges: CCs and sustainability

CCs are encountered with a range of internal and external risks and challenges. These are risks and challenges that dispute the language of trust and reciprocity that CCs communicate, deserving thus further attention.

More specifically, funding and organisation issues put serious challenges and risks against CCs' viability and long-term sustainability. With regard to funding, the necessity for sponsorship constitutes a key issue indicating the economic fragility that marks community currency systems:

The burden is increased by lack of reliable funds to pay operating costs, let alone staff salaries. Some systems have paid organizers with their own currency, but typically this is a short-term strategy, as spending money freely into circulation can be inflationary. Many turn to grant funding for support, but this requires tax-exempt status and specialized talent, and, at best, usually brings small returns. Donations, another source of funds, must be solicited. Dues are a more reliable wellspring, however, they must be kept modest enough to allow for broader initial appeal and to include lower-income members of the community. The regular collection of dues is costly and time-intensive and a renewal rate of more than 50% is uncommon (Cohen-Mitchell, available at: <http://www.newvillage.net/Journal/Issue2/2commcurrencies.html>)

At the same time, the division of labour and the overall organisation of CCs are most of the times a struggle as well as a pre-supposition for the existence and sustainability of those currencies:

Organizer burnout is a risk because, unlike traditional issue-oriented organizing, a wide range of skills is necessary and a long learning curve is required. Creating and growing a grassroots economy from scratch is an enormous commitment that does not always lend itself to simple delegation and job-sharing. Work at the start-up stage tends to be distributed more evenly among members, but as time passes, becomes more the labor of a few individuals (ibid).

In addition, transaction costs and the 'risk inherent in exchange rate fluctuations between the currencies' (Schraven, 2001: 27) raise the question of why people or businesses should engage with alternative money when they are simultaneously involved in regular currencies. A fairly realistic response to that challenge could rely on the fact that, regardless of the additional transaction costs and the risks deriving from fluctuations between the currencies, there are certain benefits for businesses, such as the ability to offer prospects for extra business and the ability to market excess capacity, while local currencies are considered to be robust to fluctuations of the regional economy (ibid: 34-5).

On the other hand, common criticisms regarding black economy and tax evasion through transactions with alternative currencies shape the debate between opponents and proponents of CCs (ibid: 1-2).

Finally, another challenge relates to incentives and the loose rules characterising community currency systems. This criticism concerns, in particular, the provision rules and who is going to provide, maintain and restore the community's resource system, as well as the appropriation rules and the aim of optimum appropriation, exchange and 'withdrawal' (ibid: 41). Although both categories of rules are set within and from the community as a whole, it has to be acknowledged that their workability depends on the preconditions of reciprocity, responsibility and trust, as CCs' economic bonds are fundamentally based on social norms, voluntary conformity, moral affinity and democratic mediation.

5. CCs for Digital Business Ecosystems (DBEs): a hybrid community currency system in a business environment

In order to assess the importance of the work in this task, we need to assess the potential of CCs for DBEs. These are questions concerning the ‘why’ of CCs, the benefits and challenges arising from CCs and the implications for DBEs, as well as the particular issues arising from CCs if they are to apply in DBEs. These questions are addressed in this section, preparing the ground for their in-depth exploration in the continuation of this task in Phase 2 of the project.

5.1. Why local currencies? Benefits for consideration in DBEs

No matter how plausible the question about ‘why CCs?’ might be, local currencies have been challenged by mainstream economists and other involved parties who often call them ‘funny money, implying that is not real’ (Bakshi, 2001) or challenge the claim that local currencies are a tool that enhances business profitability (North, 1999: 147)²⁰.

By drawing on the local currency systems in the UK and in Ireland we can identify the ways in which unemployed people have benefited by being in touch with the labour market, how old and young individuals develop further in a local currency system where all services and skills matter. At the community level, local economies are revived and regenerated as people are encouraged to make use of local products and services, producing, using and re-producing resources within the community. The local economy benefit becomes particularly obvious when local businesses are involved in CCs, as they hold particular financial power and could boost the further enhancement and sustainability of the local economy. Lastly, but equally importantly, interpersonal communication is facilitated, encouraging individuals to participate in and constitute part of the community. Thus the community identity and spirit are empowered overall²¹ (Croall, 1997: 34-9).

Therefore, it is important to provide a list of benefits that supporters of local currencies have recorded (Croall, 1997: 14) with respect to CCs, if CCs are to be employed in DBEs:

- CCs regenerate the local economy (against scarcity, interests, inflation and devaluation). This is in tune with the aim of DBEs to enable a cross-local exchange network where different localities and domains of economic activity will play a part. DBEs aim at providing local and regional players with the opportunity to network with other players in the field, boosting local and regional development;
- CCs enable people’s control over the goods and services they obtain. This is of benefit to DBEs, as DBEs aim to enable SMEs that participate in the ecosystem to freely offer and search for goods and services in the DBE platform, being thus active contributors to the self-evolving character of the

²⁰ More specific risks and challenges are discussed above in Section 4.4.

²¹ Also, benefits for the environment, as in local currencies, sharing and recycling are very much encouraged.

platform. Even though SMEs are mainly concerned with profit-making, one of the arms of the DBE research is to integrate the different business models with CCs (e.g. WIR system);

- The exchange of goods and services becomes a more personal transaction in CC systems. This is in keeping with the DBE architecture and particularly with the employment of a P2P system of communications and transactions as well as with the overall philosophy of the DBE where a community of participants becomes an integral element of the platform;
- Development of a greater community spirit when CCs are employed. As said above, the DBE philosophy aims to facilitate the building of community bonds between participants. This is also empowered by the Open Source character of the DBE software, whereas the establishment of a community within the DBE can in turn contribute to the achievement of difficult sustainability and governance goals which are of great concern to businesses;
- Improvement of social contacts and decrease of social isolation in CC systems. In general, the notion of 'social' can take multiple meanings in DEs, depending on the characteristics of the participants and the goals of the ecosystem as a whole. As far as DBEs are concerned and with respect to business participants in particular, in order for DBEs to connect different localities and domains of economic activity, unhindered and well-managed communications between participants and potential future members are required. These communications are an ongoing process that can be facilitated by the usage of CCs as well as by the employment of other means. Here language and linguistic or symbolic mechanisms of communication and exchange seem to matter significantly;
- In CC systems people are enabled to use skills that might otherwise be wasted. In DBEs, skills and human resources can be devoted to the employment and circulation of continuously evolving CCs that can benefit the DBE business community as a whole. Besides, DBEs provide local and regional SMEs with the opportunity to expand their skills and use their resources beyond their local or regional scope of activities;
- CCs reinforce the confidence and self-esteem of people not in paid work. The employment of alternative currencies and reward systems in DBEs can increase levels of confidence and self-esteem among participants. This can benefit the DBE framework as a whole, as the business community will become more easily sustainable and potentially expandable;
- Finally, CCs enable people to have a good time and improve the quality of their lives. This sounds as a broader and possibly floating benefit which, however, can be in the interest of any community and to the DBE community in particular. This is an indirect effect to be seen under the umbrella of and as resulting from the abovementioned list of benefits.

From the above economic, community-related, social and 'moral' benefits that derive from local currencies, DBEs can benefit in multiple ways and in many different directions, especially with regard to the potential of CCs to associate moral values in a system of economy activity and uncertainty. In this sense, the adoption of

CCs in DBEs has the potential to provide a more secure and stable environment by establishing trust in the system via the encouragement of trust between users in the system. This brings up a direct reference to the different trust types identified by research in DBEs. More specifically, the idea of a secure and stable environment, where community participants trust each other and the system as a whole, is consistent with what DBE literature has identified as three trust types (Gow et. al, 2006):

- Trust type X, defined as trust in the design of systems architecture and supported services;
- Trust type Y, defined as the trust of institutional and governance arrangements in the DBE vision;
- Trust type Z, defined as trust established through the ongoing co-operation and contractual obligations between companies. This type of trust is dependent on both the conduct of the SMEs and the existence of legal remedies to provide adequate solutions in the event that breaches occur.

These trust types have been highlighted as crucial to the viability and sustainability of the DBE, and therefore further research on how they can be fostered by the employment of CCs is needed. On the other hand, certain issues with regard to the overall regulatory and governance frameworks in DBEs and how CCs can respond to such frameworks arise, as discussed below.

Overall, in order for the beneficial character of CCs for DBEs to be comprehended, the above benefits need to be supported by further explanation and empirical evidence which will illustrate the ways in which local currencies benefit both individuals and communities from a financial, community-building and societal perspective. If we aim to be realistic with regard to the prospects of CCs in a DBE, the above benefits must be reviewed carefully with respect to the actors participating, the goals served and the structures available in DBEs.

5.2 Risks and critiques for consideration in DBEs

In addition to the benefits, there are challenges to be overcome if CCs are to apply in a digital ecosystem environment where businesses and not just individuals or citizens participate. Therefore, the following risks and challenges are of certain importance and further attention must be paid to them:

- The alternative exchange system introduced by CCs connotes an alternative financial system to be used by ‘particular’ community groups²². Thus ‘mainstream’ goods and services produced by businesses must be introduced in the community currency system if the latter aims to be implemented in a digital ecosystem. This contrasts with the view of those who explicitly distinguish community economic development and mainstream economics arguing that CCs belong to the former (North 1999);

²² In the UK, middle-class list of goods and services predominate, such as alternative therapies, arts and crafts, organic food, repairs and maintenance, building and constructions. Also, exchanges usually take place in people’s homes or during social events (Croall, 1997: 23-5).

- Individual-oriented systems are understood as rather inappropriate to be used by businesses (Croall, *ibid*: 63-72). Positive or negative balances in the system, exchange of local money, etc. constitute common concerns of businesses when being asked to join;
- Price of jobs, goods and services, as well as the proportion of local currency versus national currency (in case of complementary currencies), are issues of concern for businesses aimed at participating in a digital ecosystem;
- Concerns about going into debt and possible loss of benefits (the UK case) have commonly constituted barriers to the participation of businesses in CC systems. Thus they will also have to be addressed and resolved in a digital environment and particularly by taking into consideration the conditions of mediation, impersonal communication, and the cross-national nature of transactions mediated by a digital ecosystem;
- Taxation issues and varying legislation concerning taxation and social benefits create many concerns for businesses. For instance, governmental policies in countries such as the UK are not clear or flexible enough when it comes to usage of local currencies, whereas other countries, such as Australia, encourage people to get involved without being asked to pay extra taxes²³;
- Long-term sustainability and issues of reciprocity, trust, scope of exchange, and mainstream financial barriers are all issues encountered in a digital business ecosystem, and they need to be addressed;
- Local constraints and the risk of fragmentation. Traditional CCs draw up the boundaries of certain localities, whereas a digital business ecosystem aims to cross local boundaries linking localities and obtaining an intra-national, international, or even global character;
- Diversity of shape, size and scope of trade and identity are matters which can operate both as strengths and weaknesses in community currency systems. Community sustainability is vulnerable to expansion beyond localities, whereas a geographically broader business framework represents an incentive for the businesses who are hesitant to join a digital ecosystem.
- Role of ICTs, since digital technologies are at the core of every exchange in the digital business ecosystem. Are training and education needed for businesses who may enter digital environments for the very first time? Which are the implications for communication, trust and governance? These are questions to be examined carefully in DBE-related research and with regard to CCs.

In the following section, the above series of challenges and risks are classified in five main themes. These themes are discussed to some extent, illustrating how risks and challenges can be turned into advantages, benefiting the vision of CCs for DBEs.

²³ The LETS system is not normally liable to tax (*ibid*: 78).

5.3 CCs for DBEs: risks, challenges & prospects

Overall, the vision of applying CCs in a digital ecosystem environment and in a business context in particular presents a range of risks, challenges and prospects. At this point, we should note key categories of risks and prospects, as they are going to influence the direction of the research in the next two phases. The key risks and prospects identified in this research can be classified as follows.

Firstly, **the trust foundations** in digitally mediated communications are built on the basis of specific rules, regulations and fixed activity lines. Although CCs provide the ground for system stability and trust relationships, the regulatory framework and the overall regulatory architecture designed in DBEs for the establishment of trust go beyond the loose and non-institutionalised rules and principles around which traditional offline CC systems are organised and operate. Therefore, the task aims to draw on the research work done in the DBE project, as this could be useful with regard to the online and business nature of transactions in DBEs and their implications for trust if CCs are to be employed in DBEs. This is something however to be researched in more depth in Phase 2 of the project, where appropriate connections with T12.3 on Accountability, Identity and Trust in DEs will be made, and previous work on trust and regulation as part of the work carried out in the DBE project will be considered.

Secondly, the involvement specifically of **business agents** in a digital ecosystem environment challenges the applicability and efficiency of CCs in this framework. If CCs are to be employed in DBEs, it is likely that CCs will entail implications and risks concerning engagement of business in DBEs. Issues concerning the means through which a digital business ecosystem can overcome concerns that put off businesses in alternative currency systems arise. The issues at stake relate closely to the problems discussed in more detail below in Section 5.4 with regard to the difficulty that CCs face in persuading businesses to join, a difficulty that deserves further attention. In CCs, the sum of all accounts is zero, no interest is charged and negative balances are unavoidable. However, instances of abandonment of the community by participants whose the trading balance at that particular point in time is ‘minus’ - in ‘debt’ - can shake the confidence of the community in the principles of trust and mutuality, as pointed out by Croall for LETS (1997: 51): ‘One of the most widespread problems, which seems to affect a great many people when they first join a LETS, is the worry about being “in debt”...Many people don't find it easy to grasp the principle that the 'debt' is **to the community** rather than to an individual. Even when they understand that no interest will be incurred, they are often still reluctant to take that first step’ (emphasis added). The goal must be that businesses in different sectors and localities are considered, in order for businesses with synergistic interests and already trained to collaborate within a regulatory framework that guarantees trust and mutuality not to feel threatened if some participants end up with a negative balance. The challenge to be encountered thus is to identify the stimuli needed in order for business actors to be attracted to the idea of CCs and business-oriented interests to be secured while community building and reciprocity are strengthened.

Thirdly, the different **localities** involved in DBEs challenge the whole idea of pure local exchange that surrounds CCs. DBEs aim to bring together different physical or virtual localities and business sectors as

well as to facilitate exchange within the locality and between different localities. This may entail new risks, as well as certain opportunities, particularly with regard to the rules and regulations applied, which may vary from locality to locality. As far as the EU is concerned, different regions and countries vary with regard to the business traditions and activities taking place, as well as – to some extent – with regard to the rules, regulations and governance models applied. This may also challenge not only the type of CCs applied to DBEs but also the sustainability of the community which has adopted the CCs and the rules and principles of the community currency system itself. Besides, the very challenge of the cross-local character of DBEs for CCs is shown by the local character of offline currencies which always operate with certain local or regional restrictions. Thus this task may need to draw on the work already done in the DBE project where the locality challenge had been explored from many different perspectives in connection with trust, regulation and governance issues.

Fourthly, **Information and Communication Technologies (ICTs)** are enablers of exchange among localities/regions and industry sectors, while being a fundamental cornerstone for the existence of DEs in general. They also mediate communications, and therefore more rigid institutional framework, governance models and regulations are required than in offline communities to ensure trust in communications. Mediated communications and lack of personal contact and rapport raise trust and governance issues which are generally not encountered in offline spaces, whereas the element of business actors participating in DBEs poses further questions concerning the interaction and interdependence between the personal and the business element in mediated communications and the ways the system regulates the latter. Also, ICTs challenge the local element of CCs, eliminating time and space boundaries between sub-communities and providing the potential for extensive networking. This brings us back to the ‘locality’ issue briefly discussed above and which will be substantially researched in Phase 2 of the project. Finally, ICTs pose questions concerning the format and structure of the digitised linguistic forms (semantics) used, challenging traditional communication forms in offline community environments. This issue holds particular significance for CCs, as CCs is a language that carries symbolic power, constituting both subject and object of communications and being therefore very much determined by the format and structure it takes in digitised communications.

Lastly, **sustainability** issues arise if CCs are to operate in DBEs. Although we realise that this is a very difficult challenge, if sustainability of the system is to be ensured, exchange of goods and services has to reflect on enterprises’ needs and CCs should be seen as a reward (credit) system for the active members of the digital ecosystem community. Sustainability appears as an umbrella concept, significantly influenced by the elements of trust, business actors’ participation, cross-local scope and usage of ICTs, while being both challenged and facilitated in a community currency system for DBEs. Moreover, in order to comprehend the importance of sustainability, integration of the work on CCs with the trust and governance tasks is needed. This will help us reflect on and strengthen at the same time the system’s sustainability. Thus appropriate regulation and governance systems are meant to be in operation to support the functionality of the system and its future sustainability.

The focus in what follows is first on the ‘business’ challenge (Section 5.4) and second on the ‘digital’ challenge (Section 5.5). These two categories of challenge will be central in Phase 2 of the project with regard to the particular challenges and prospects that CCs bring about in DBEs.

5.4 Missing businesses in CCs and DBEs

Concerns about the lack of business actors in CC systems (ibid: 64-7) have a prevalent place in our exploration of the potential of employing CCs in DBEs. These are concerns to be considered further if aiming to talk about business communities and alternative money for business actors in a digital ecosystem environment. In this document, however, only some introductory remarks will be made with respect to this issue.

CCs need businesses for obtaining access to a wider range of goods and services, enabling thus individuals to trade further. Also, CCs need business actors because businesses provide social networks that CCs require if their sustainability is to be ensured. On the other hand, businesses need CCs in order to have free and instant credit, a price advantage over competitors, free publicity through the various communication means of local communities (e.g. directories, newsletters, etc), access to new products and services without spending national currency, as well as enhancement of reputation and popularity within the business community they aim to belong to.

Since there are mutual interests and advantages to be gained for both businesses and CCs, why do businesses participate in community currency systems only rarely? This can mostly be explained by businesses’ concerns about how to spend local currency, by the effort and training needed in order for businesses to understand and evaluate the CC system, by the participation of alternative businesses in current CCs, as well as by businesses’ worries about negative balances. Also, uncertainties about taxation and trading implications make businesses sceptical about joining CCs, and therefore appropriate and context-dependent accountability frameworks that will address tax accounting may be necessary. On the other hand, the participation of business actors in DBEs raises the question of how the loose, reciprocity-based and self-regulated, by definition, CC mechanisms can apply in a digital ecosystem environment, as businesses can hardly overlook goals of self-centred economic profit and interest. This raises in turn the issue of whether a more formal regulatory framework for CCs may be needed in DBEs, in order for firms to operate on the ground of reciprocity, trust and community-based exchange. Although this may violate basic principles of CCs, the CC framework for DBEs should be looked at more carefully in Phase 2 in connection with the work done on trust and regulation in the DBE project and under the scrutinization of specific case studies, such as that of the WIR Economic Circle Cooperative system in Switzerland.

The WIR Economic Circle Cooperative system constitutes specifically the key example of CCs designed especially for small and medium-sized enterprises. It was established in Switzerland in 1934 and has some

80,000 members²⁴. Also, in the UK the LETSgo and LETS Solutions organisation have developed pilot schemes to attract small businesses. The WIR system in particular is a case of exceptional success that deserves further attention and provides the ground to see how business communities adopting CCs can become successful. There are two milestones in the course of the WIR system that illustrate its value: first, the WIR system managed to achieve a rehabilitation in the difficult period of 1939/1940, showing flexibility and responsiveness to the economic and not only challenges of that time; second, the introduction of measures against discount-trading with WIR-credits in 1973,²⁵ as the WIR leaders decided to take effective measures against phenomena where WIR-circles were not spared the negative side-effects of boom mentality and self-interest, putting qualitative above quantitative thinking. Both milestones showed that in CC systems where businesses participate, ideology can be well balanced with realistic entrepreneurial thinking, with unambiguous rules preventing misuse of ideology (Creco, available at <http://www.projects.ex.ac.uk/RDavies/arian/wir.html>). Therefore, WIR will be one of the case studies to be looked in Phase 2 of the research.

5.5 ICTs and online CCs from a digital ecosystem perspective

Business actors operate and communicate with one another in a digital ecosystem environment through the mediating role that technology and ICTs in particular play. ICTs raise the issue of community building enabled by technologically mediated communication and exchange. It is important to look at ICTs and their role in community building, as this allows a more critical view of how CCs come into play as online CCs and the implications for community building in a DBE environment. The critical role of ICTs in the quality of communication and exchange in a community currency system within a digital context deserves some more discussion here.

5.5.1 ICTs and community building

In the age of the crisis of community (Evans, 2004: 2-4) ICTs pave new paths for ‘virtual’ modes of collaboration and community building across time and space distances. After the decline of rural living and the advent of industrialisation, urbanisation and post-industrialism, civil society and collective activity have been weakened while societies have become deeply and multi-dimensionally fragmented (Saunders, 1981; Jacobs, 1961).

In general, views have been articulated over the last couple of decades concerning the revolutionary effects of ICTs on economies through establishing the information industry and bringing up economic prosperity of new quality and scale (Splichal, 1994; Toffler, 1983) and, among other popularly discussed effects, on democracy and culture (see Evans, 2004: 14-8). An insider of CCs, Lietaer (2001), argues that new types of

²⁴ Information about the history and operation of the WIR system in Switzerland can be found at <http://youtube.com/watch?v=uQehEGGwy0Q>.

²⁵ Discount trading involved selling for cash (Swiss Franks) unspent balances of WIR Franks

money and transactions have been facilitated through networking technologies and the Internet, such as e-case, e-gold, etc.

However, these optimistic views should be questioned, so that a more balanced and challenging understanding of the effects of ICTs in various areas of social life is brought to the fore. This is reminded by Graham when he argues that ‘society and technology are *recursively* linked in complex ways’ and that the ‘technology-impact-society effect model’ is not valid (1996: 55).

How do then ICTs introduce new potentials for the revitalisation of communities and beyond the particularly optimistic views and predictions of the overall impact of what is commonly called Information Society (Lyons, 1998; Castells, 1996)? ICTs are deeply interactive media of communication, allowing users to become not only active consumers but also active producers of content, services and infrastructure. In that sense, users have the opportunity to interact with one another, developing certain kinds of communication on the basis of their interests, needs and purposes. Spaces in which such interactive communications are held are MUDs, MOOs, chatrooms, Instant Messaging, (IMS), whereas World Wide Web, email communication and bulletin boards contribute to the development of complex modes of interaction between the user and the medium itself (Evans, 2004: 54). On the other hand, mass media of communications offer an individualised experience and rather fragmentary and atomised communication channels (ibid: 53).

Regarding communities in particular, and regardless of the rather ‘elusive’ and ‘elastic’ character of the community concept (ibid: 55), we aim to look at ways in which ICTs might encourage, facilitate and even revolutionise what has traditionally been seen as community. Although the literature has examined the ‘community’ notion by articulating both positive (Wilmott, 1986) and negative (Sennett, 1970) accounts of it, with the latter drawing on the arguably ‘claustrophobic’ and ‘repressive’ character of communities, we aim to look at communities as complex networks of cooperation, inclusion, democratic decision-making and mutuality (Robson, 2000: 71; Etzioni, 1993: 6).

Debates on communities as social networks currently in crisis, impoverished, atomized, fragmented, with little trust and social bonds (Robson, 2000) and under the neo-liberalist spirit of the 1980s where the individual is now considered as an independent and responsible actor for its own well-being (Evans, 2004: 56-7) come to be mitigated with the advent of ICTs. This was first hailed by policy makers and authorities in the West:

We need to improve the access to information and communication technologies for people who live in poor neighbourhoods. This is not an end in itself, but a powerful means of delivering services, conquering isolation, empowering individuals and bringing people with like interests together (Michael Wills MP, 1999).

Unlike the railroads of the Industrial Age, the trade routes of the Information Age can run through every city, every town, and every community. We can use new technology to extend opportunity to more Americans than ever before; we can truly move people out of poverty more rapidly than ever before. No-one has to be bypassed this time around (Bill Clinton, 2000).

In practice, ICTs facilitate, encourage and expand the notion of community by strengthening existing offline communities and through establishing new forms of virtual communities of interest, of attachment and of

place in cyberspace (Wilmott, 1986). By looking in particular at the elimination of time and space distances through the Internet and other networking technologies and examining the alternative ways of communication, work, education, sociability and leisure that ICTs bring about, we can argue about the re-invigoration of communities through ICTs, while keeping an eye on exclusions and divides in the digitally mediated communications.

More specifically, ICTs or networking technologies contribute to community revitalisation mainly through the following three mechanisms:

- Through rebuilding and empowering offline communities (Benedict, 1991; Schuler, 1996; Communities Online, 1999). This is understood as ‘a reordered world where the individual can sample a community life that has long been eroded by the rush for individual gains, the rending of the fabric of family life, the polarisation of an economic system that makes for haves and have-nots’ (Odone, 1995: 10). In this case, and although communication is held online, the bridging of distances in offline spaces takes place with people who reside in the same locality finding alternative paths of communication, information and initiative-taking. This sort of community empowerment also takes place through ‘digital city’ (Evans, 2004: 73-5), where individuals can find information about the local area where they live and become more engaged with the life of the local space where they live.
- Through building and establishing online or virtual communities (Rheingold, 1994; Wellman, 1999) that will create in Negroponte’s words ‘digital neighbourhoods’ (1995: 7)²⁶. These virtual communities can be either local-specific or of rather global scope, whilst challenging the local element of the community notion itself. Also, the very nature of those communities varies in terms of space, interests and conditions. Virtual communities are more likely than digital cities to have been created from a grassroots base and this is why they are less visible and traceable.
- Finally, alternative forms of communities enabled by ICTs are the community computing facilities, ‘venues stocked with computers and associated hardware and software where individuals can access ICT equipment and services’ (Evans, 2004: 77-8). To this category also belong information points, where local information can be found by using computer-based technologies.

The above multiple, flexible and innovative community forms are very much enabled by ICTs but most of them reflect a top-down approach to community needs, as only rarely community participants are consulted with respect to introduction of ICT facilities and services. This can actually explain to a great extent that a significant number of participants do not take advantage of those facilities, whereas others do not have the necessary skills to do so. Nevertheless, ICTs entail new prospects of community building that go beyond the

²⁶ In this document, the purpose is to show the networking potential of new technologies and its implications for community building. On the other hand, we do not aim at providing a critical assessment of accounts that present this networking potential without problematising it– a criticism that Negroponte’s work is subject to - as this is a discussion that goes beyond the scope of this document.

local scale, bringing up the potential of CCs in DBEs through the digitally mediated connection of different localities and industry sectors. This potential is discussed in more detail in what follows.

5.5.2 ICTs and CCs: CCs in online spaces

Technology and ICTs in particular are at the epicentre of the interest as mediators of communication and enablers of mediation in the ways in which meanings and symbols are exchanged and communicated (Silverstone, 2002: 762).

Technology has the potential to broaden the horizons of CCs through mediating the exchange of goods and services throughout the globe and facilitating the realisation of transactions with no time and space limits. The emergence of pioneer technology-mediated means leads to exchanges and transactions through multiple currencies at the local, national and international scale (Lietaer, 2001). A commonsense example is the Stock Market across the world, as shares can be circulated and exchanged instantly thanks to real-time computer technology.

Furthermore, in technology-mediated communications, sharing and interaction are commonly observed at the infrastructure level (e.g. computer grids), at the code development level (e.g. Open Source), as well as at the services level (e.g. blogs, wikis, etc.). Hence, and from a business perspective, participation and interaction in technologically driven communications have the potential to promote business transactions while building virtual communities and creating virtual exchanges through e-currencies. Nevertheless, in 2006, the “fictitious” economy of global financial markets was still 50 times larger than the real economy (Harvey, 2006), and this size differential is entirely due to interest, showing that there is more to be done in order for dramatic change to happen.

As far as CCs are concerned, the fact that networking technologies such as the Internet facilitate transactions through other sorts of money – e-gold, e-cash, etc – by eliminating geographic and time distances significantly contributes to the opening of new horizons for CCs. More specifically, CCs in online spaces have the potential to develop new types of transaction and to enlarge their scale from the local to the transnational level, achieving at the same time more collective and less selective membership practices. In the age of the Internet, CCs make virtual or imaginary money immediately available through a self-regulated trading network, with users issuing and using their own money within the network (LETSystems – new money. Available at: <http://www.gmlets.u-net.com>). This means that users from different localities and areas of activity can register and become community members, overcoming time and space limitations in offline transactions and expanding the geographical and domain scope of their transactions. The online mediated communication provides the online community with great prospects of geographical and activity expansion, on the one hand, and with hardly definable boundaries and a rather ‘floating’ sense of community identity between members, on the other. Whereas in online communities which involve ordinary people and the idea of sharing as the currency itself (e.g. Flickr and the currency of ‘photo sharing’) not much identity glue is required, in business online communities certain identity elements should be in place for the community to

be sustainable regardless of the space and time gaps that occur. This is of clear interest to DBEs, where cross-local and multi-domain business communities come to life through digital means of communication and transaction, as the alternative of CCs will have to deal with identity and sustainability issues as well as with the rather shaky notion of online community itself.

In addition, issues of ‘openness’ and trust are of critical importance when it comes to virtual or technology-mediated CCs and this is why the established sense of community and the ways that ICTs influence this sense of community remain issues at stake. From a DBE perspective, regulatory frameworks and governance models are in place to mediate trust relationships in communications and to make up for the loss of personal, offline contact between participants. At the same time, the participation of business actors in DBEs pushes formal regulatory frameworks to become even more rigid, substituting the elements of community-based trust and mutuality that is a requirement in offline CCs. Also, networking technologies enable DBEs to develop on a cross-local scale, challenging the local community element of CCs and posing further risks of trust, reciprocity and transparency. These risks are usually solved through formal regulatory frameworks that do not correspond to the fundamental principles of CC systems.

Therefore, in Phase 2 the task will examine the compatibility and applicability of the research carried out on trust and regulatory architecture in the DBE project with regard to the potential of employing CCs in DBEs. The issue to be looked at carefully is whether formal agreements and regulations should touch upon the operation of CCs or the latter should lie outside such schemes. Also, the possible effects of formal regulations on the means through which CCs can be digitally communicated in the ecosystem must also be looked at. CCs are a language that carries symbolic power, and is therefore influenced by the format and structure it takes in digitised communications, as discussed in Section 2.3.

6. Gift economy, CCs and the grounds for business modelling in DBEs

The above challenges and prospects raise issues of financial operability and actual business functionality and sustainability of CCs in DBEs. Therefore, this section opens up the discussion of the grounds for business modelling of CCs in DEs in general and in DBEs in particular, mapping out certain business frameworks that are in keeping with the key principles of CCs and which could provide the grounds for the employment of CCs in DBEs. Nevertheless, this discussion must be further developed in Phase 2 of the project as part of the overall work of WP12 on Socio-Economic Models for DEs and in collaboration with other tasks and WPs.

6.1 Introduction: modern money & risk economy

As socially constructed and interpreted object and phenomenon, money (fiat money) is identified in modern times with legal tenders or currencies issued by national governments or international financial authorities and imposed as a general medium of exchange by law²⁷. As already said, this money has not the intrinsic value that commodities used to have or the intrinsic value that the commodities that are bought and sold through it always have. Moreover, there is an underlying contradiction and a fundamental source of further contradictions in today's economic system, as today's system fails to ensure equality and equal distribution of wealth, while being weak to obstruct overusage of natural resources, decline of moral values in financial exchanges and financial risk.

More specifically, the risk economy is currently considered the dominant economic model deriving from Capitalism and espousing the principles of 'laissez-faire' and 'free market' as opposed to interventionism and state protectionism (Wikipedia, *Risk Economy*). Although risk and its importance are not easily and always accurately measured, the engineering definition of risk is as follows: Risk = (probability of an accident) × (losses per accident). Financial risk, in turn, can be defined as: 'The chance that an investment's actual return will be different than expected...It is usually measured by calculating the standard deviation of the historical returns or average returns of a specific investment'²⁸ (ibid).

But what is wrong with risk? Life is a risk itself and the increasing risk in today's economies might entail more gains although the probability of gains is lower than it used to be in the past:

A good part of the certainty that characterized our parents' economic life has turned into a set of variable outcomes for this generation. On the plus side, by taking on more risk, the best-case scenarios for the current generation, though they are less certain than the outcomes our parents' generation achieved, result in more wealth and well-being than our parents achieved. But on the downside, taking on that risk and

²⁷ Not all alternatives to "legal" tender are "illegal", as in CCs alternative or complementary currencies are perfectly legitimized and often combined in usage with legal tenders.

²⁸ The average returns depends on the previous history of returns. In economics, there is a thread of research conducting technical analysis of previous returns with respect to certain types of investment, so that certain conclusions about whether an economic plan can be suggested or not can be reached.

uncertainty results in a potential worst-case scenario that puts us in an economic position very much inferior to theirs (ibid).

Historically, free market has come to be identified with economy of risk, and it has been supported by the traditions of liberalism and monetarism. Free market is supported by the ideal of freedom and autonomy of action and the economy-based assumption that decentralised economies where different people make free decisions can produce better results. Free market has been subject to severe criticisms with respect to the risk of socially and politically uncontrollable competition, of dominant monopoly and oligopoly, as well as of economic and social corruption (Whitman, 2005: 3-4). One of the main criticisms is based on the argument that in the modern economic and monetary system a merely numerical value is attributed to money. Thus the consensual and fictitious value of money becomes scale-dependent (i.e. the more money is available, the more value is assigned to it, entailing psychological and practical effects on our perception of the value of money) and fails to be used as a social exchange medium, resulting in private ownership and in what Noam Chomsky calls 'privatized tyranny'. On the basis of these criticisms, there are many who consider government and public intervention necessary to protect the economy from the risk of market failure and the breaking of socially reasonable regulations: 'the free market is socialism for the rich - [free] markets for the poor and state protection for the rich' (Chomsky, 1997).

6.2 Modern money & gift economy: where do CCs belong?

The above argued gap in the societal and moral use of money, as well as the inherent contradictions in today's economic system bring to the fore the necessity of an alternative; an alternative where money will be conceived in a broader and more flexible manner, while its usage will serve not only financial aims but also societal purposes, moral ideals and community interests.

This alternative exchange system is commonly referred to as gift economy or economics of sharing, and has its roots in the Economic Sociology literature. Particularly Mark Granovetter's (1985 & 2002), Vaele's (1996) and others' work in this field developed the idea of the significance of social relations and structures in economic activities, and the importance of trust in facilitating exchanges. The Economic Sociology literature highlights the gradual shift of the study and reality of economics from a utilitarian to more complex and multi-dimensional perceptions and usages of money on the basis of the embeddedness of economic capital in social capital. This embeddedness has paved the way for contemporary research to maintain that beyond the external forces driving the use of money, such as economic and social standing (Granovetter, 2002), intrinsic incentives such as community- and network-building are of critical importance.

These developments have brought in the gift economy or economics of sharing, namely a system of exchange where money is conceptualised not only as medium of exchange, unit of store and economic capital but also as a spiritual asset that creates social and symbolic capital. This system of exchange signifies a system for the exchange of goods and for the organization of labour which relies on the development of close social ties and more specifically on relations of kinship where reciprocity and mutuality prevail (Sahlins,

2004: 278). A gift economy system depends on reputation, trust, and mutual knowledge of those participating and being involved in exchange. The individuals or bodies providing the 'gifts' need to trust and engage with the gift recipients, a precondition that unavoidably raises issues of sustainability, scale-dependent development, incentives and stability of a system or network of gift giving. On the other hand, this presupposition acknowledges the moral advantages of gift economy, where risk is minimized if not eliminated and extensive social and symbolic capital²⁹ come to be added to the purely economic resources exchanged and traded.

There have been various studies that have traced the existence of such exchange systems in modern societies. Cheal (1988: 20-25), for example, has traced the role of such a system particularly in the invisible economies of the household and the ritual practice of gift exchange on festive occasions, such as Christmas, weddings and Thanksgiving. Cheal (ibid: 25) also points out that the practical importance of such gift or symbolic transactions for the social organization and for the kinds of ties between individuals should be viewed in an everyday life context and with the evidence provided in this context. Another expression of the gift economy in modern societies lies in the activities which are explicitly designed to avoid characteristics of market organization (Sandel, 1998). In this respect, emphasis is given to market-oriented thinking and practicing that have expanded into spheres of life where market principles should not apply (e.g. marketisation of spiritual life, research and academic activities). In this sense, market organization leads in particular to growing economic and social inequality that erodes the notion of citizenship, weakening social solidarity and proximity. Thus, the social- or community-driven identity and connectedness are severely damaged in a market exchange system, disorganising collective activities and socially accountable politics. This is where the gift economy system is suggested as a challenge to the limits of the market as well as the framework where 'the moral and civic goods that markets do not honor and money cannot buy' (ibid: 122) will be captured.

CCs come to the fore as this kind of economic alternative of socially embedded exchange relationships and gifting. As shown above in the deliverable, CCs rely on non-hierarchical structures and forms of operation, on legally non-binding mechanisms of rule enforcement, on local or regional scale of diffusion, and, most importantly, on community-based principles and ground rules. The absence of a compulsory price system and of restricting management structures (Benkler, 2006) allows for money to serve participants' needs and to strengthen social bonds under the pre-condition of trust and reciprocity. In that sense, what mainly distinguishes risk economy from the ideal of CCs is that, whereas the risk economy locates risk on the side of individuals (Jubak, 2004: 1), CCs attempt to minimise risk by shifting responsibility to community and to the power of the community spirit. In addition, CCs are able to counteract risk on the grounds of trust relationships, since socially embedded economic acts can, thanks to trust, monitor the operation of the

²⁹ Social and symbolic capital could be used as a context where money is proposed not just as a means of exchange, but rather as an incentive for community building.

exchange system without formal devices of risk-catching and without the calculativeness that underlies risk-based decision making (Uzzi, 1997: 43).

6.3 Gift economy framework and space for business modelling in CC systems

The substantive discussion of the appropriateness of the gift economy exchange system for CCs and of the grounds for the employment of the gifting idea in CCs systems begins with the idea of the Commons. Then the gift economy framework of principles is briefly presented, paving thus the way for the identification of the common grounds between the gift economy and CC systems.

6.3.1 Commons and the way to gift economy

‘Commons are another core institutional component of freedom of action in free societies, but they are structured to enable action that is not based on exclusive control over the resources necessary for action’ (Benkler, 2006: 24). They can be classified into two broad categories based on access and regulation, respectively: on the one hand, those where open access to resources with no access restriction is provided (e.g. access to natural resources) and those where only restricted accessibility to resources is provided (e.g. limited pasture arrangements); on the other hand, those which are regulated (e.g. streets and motorways that are tolled) and those which are non-regulated, with some only conditional examples of open (free access) commons being non-regulated (e.g. use of air resources in the format of breathing) (ibid: 73-4). Regardless of the more or less regulated status of free or restricted access to resources, the notion of Commons provides people with substantial freedom concerning the idea of leaving ‘individuals free to make their own choices with regard to resources managed as a commons’ (ibid: 74).

The idea of Commons constitutes the ground on which issues of community building and trust for the exchange of money or resources arise and where questions of openness or restrictiveness of access and regulatory frameworks to apply are posed:

...commons have provided non-market-based solutions that achieve much lower transaction costs... The low transaction costs are achieved through a diversity of social and human idiosyncrasies such as the ability to develop routines, to adopt customs, to integrate within one’s language and/or religion...dimensions that may benefit the members of a community by such factors as creating trust and/or reducing the significance of incomplete contracts (Liebenau and de Fontenay, 2006: 13).

The above issues and questions will be considered on the basis of the gift economy system which provides the rationale and incentives required for the idea of Commons to be realized in a community currency system.

6.3.2 Gift economy framework of principles

In order for this document to illustrate the significance of gift economy systems for offline and online CCs in DBEs, it is important to take some definitional approach to the notion of gift economy at this point. As the purpose of this last section of the document is to propose the gift economy model as a relevant framework to

help in the development of new business models based on CCs in DBEs, the discussion focuses on the main characteristics and elements of the gift economy and the common grounds with CCs. On the other hand, this report does not engage in a particularly extensive critical review of the gift economy model for both research and practical reasons. Other tasks in WP12 of Phase II of the project focus more specifically on the gift economy, while the emphasis in this report is on the constitutive elements of the gift economy that are relevant to the scope and aims of this work. Here we do examine the diversity of forms of the gift economy system and the problematic character of some of those forms, especially in high-tech platforms which are particularly interesting for the research of CCs in DBEs.

Academic literature defines gift economy as 'a system of redundant transactions within a moral economy, which makes possible the extended reproduction of social relations' (Cheal, 1988: 19). On the other hand, more practically directed approaches understand instances of the gift economy with regard to the knowledge economy as:

...the primary method of socialising labour. Funded by the state or by donations, scientists don't have to turn their intellectual work directly into marketable commodities. Instead, research results are publicised by 'giving a paper' at specialist conferences and by 'contributing an article' to professional journals. The collaboration of many different academics is made possible through the free distribution of information (Barbrook, 1998: 3).

The relevant literature on gift economies summarized the framework of this exchange system in the following characteristics:

- As Gregory (1982) argues, gift exchange involves the exchange of inalienable objects between interdependent transactors. The ownership of gifts holds a rather symbolic value for the transactors, carrying traces of the gift-giver and bounding the recipient until the gift is reciprocated. On the other hand, in market exchange, the exchange involves alienable objects between independent transactors.
- The time difference for when exchanges are equalized. In gift economies, time lag between gift and counter-gift means that a gift may be reciprocated a long time after the exchange has taken place, whereas in market economies this happens instantaneously and simultaneously. This masks the contradiction between the desired or real generous character of the gift and the multi-staged process of gifting exchange that makes the system viable (Bourdieu, 1997: 231-2).
- The motives underlying the exchange are not economic in the narrow sense. In gift economies what drives the exchange is the accumulation of symbolic capital (e.g. recognition, honour, nobility, etc) mostly through the transmutation of economic capital achieved by symbolic exchanges and through the logic of 'disinterestedness' (ibid: 234-5).

Particularly the last characteristic of the accumulation of symbolic capital is of interest to the CC systems and to the employment of complementary currencies in a community framework, as discussed below in Section 6.3.3.

The gift economy does not constitute a completely new phenomenon, as it is deeply embedded in economic relations that existed in pre-capitalist societies (Mauss, 1954; Polanyi, 1944) and which have survived in capitalist times (Cheal, 1988; Offer, 1997). On the other hand, the gift economy is commonly contrasted to market or exchange economy, with the latter being a commodity (or exchange) economy in favour of those who have the most, whereas a gift economy is in favour of those who give the most to others (Hyde, 1983). Whereas the gift economy relies on the principle of reciprocity, regard, loyalty and discretion, aiming at exchange of objects with intrinsic value through social altruism and tight bonds of collaboration and affinity, market or risk economy relies on financial flows and market transactions, aiming at monetary profit through scarcity of resources.

The principles of gift, trust, community, reward, altruism, peer-to-peer exchange and reciprocity underlie the gift economy notion and its varying applications in off- and on-line economics (Barbrook, 1998; Berguist and Ljungberg, 2001; Kollock, 1999; Newmarch, 2001; Raymond, 2000a, 2001a & 2001b). These principles come to challenge the extrinsically forced and monetary-driven motivations to exchange that free market or state economic models sustain. The notion of gift economy attempts, in this way, to strengthen intrinsic or community-motivated incentives for exchange, creating space for economic production that goes beyond market and state powers and which reflects the diversity of social frameworks where exchange takes place. The gift economy holds, therefore, a remedial character, aiming to handle phenomena of money scarcity and market failure.

Nevertheless, beyond reciprocity incentives, it is interesting that the literature also identifies examples of the gift economy system as being based on self-centred motivations of gifting, which are particularly popular among business actors (e.g. donating to a charity for the tax benefit, business gifts for network-building, etc). Also, the literature identifies examples of gift economy systems based on social pressure explained by social norms and rules in favour of gifting, as well as examples based on ideological reasoning relating to the ideas of sharing, freedom of speech, copyright, ownership, public good and altruism (McGee and Skageby, 2004). This remark shows that clear-cut distinction between gift and exchange economy is often misleading, as gift economy is in any case embedded in the corporate and stock exchange aspect of free market or exchange economy. This drives us beyond commonly viewed understandings of gift economy as standing on its own or just contrasting market economy, such as the following: 'exchange is at odds with gift giving. The competition which is characteristic of Capitalism pushes the exchange way against the gift way. In fact two paradigms or worldviews are formed, one based on exchange and the other on gift giving' (Vaughan, 2004).

Scholarly studies have questioned the binary distinction between gift and market economic systems by examining the overlaps between the market and gifting and through identifying domains where both can co-exist. For instance, Offer (1997) presents examples, such as insurance goods and services, where market and gift spheres of exchange are separated by an overlap, with the market curve and the gift or 'regard' curve co-existing. In addition to the claim about space available between market and gifting, Offer (ibid) presents the phenomenon of pseudo-regard in market exchanges as an inauthentic version of the actual regard that all

involved actors in gift exchange are engaged in and which aims to apparently bring market closer to the principles and ideals underpinning the gift economy.

The above possibilities of the gift economy can thus function complementarily with the exchange system of profit. Therefore, both systems should be considered and other proposals such as the 'economy of regard' and instances of 'pseudo-regard' in market exchanges (Offer, 1997) must not be overlooked.

6.3.3 Gift economy and common ground with CCs

The remedial character of the gift economy comes to meet the community currency system where alternative and community-based commodities and various formats of 'currencies' attempt to cure inherent weaknesses of the liberalised market-operating economies of the capitalist times and after surviving the transition from pre-industrialised to post-industrialised economies. Having as starting point the Sociology of Economics tradition and the notion of embeddedness of economic life in social relations, contemporary industrialised economics goes beyond neo-classical profit-driven or atomised economic activity. Economics is embedded in social structures such as community structures, with the latter determining trust or malfeasance in economic transactions and beyond assumptions of generalised morality or institutional arrangements that either under-socialise or over-socialise economic outcomes (Granovetter, 1985). Thus, and beyond institutional or gain-oriented arrangements, the aims of sociability, approval, status and power are key enablers of economic activity and collaboration in particular (ibid).

With regard to the 'community' idea in economics, Fiske (1990) has pointed to three types of 'sharing' that lie outside the market boundaries. One of the types of community sharing is the community exchange of resources that does not rely on equality or hierarchy of norms and principles but only on the attributes of the community members in order for sharing of resources to take place. According to Cheal's definition (1988: 19), the gift economy is characterized by redundancy, mostly operating in exchange domains where socially constructed relations and the sense of community matter, such as the scientific or knowledge economy sector and the software or new technology innovation area of exchange. Likewise, we have seen that CCs have been historically facilitating domains of exchange where the community ideal predominates and the idea of alternative economics can flourish on the grounds of reciprocity and trust. In this sense, we can say that the notion of embeddedness and the parameter of social or community ties - and those ties' structures and organisation - play a critical role in both gift economy systems and instances of CCs not only in the rules and principles underlying exchange but also in the act of exchange per se. In this sense, social ties and its various aspects (e.g. cultural, cognitive, systemic, etc) explain exchange itself better than purely economic accounts do so.

In this sense, whereas in exchange economies the pursuit of individual gain prevails, the gift economy empowers community and alternative forms of exchange through mutual gift giving and on the basis of trust for the achievement of community goals and through collective effort. Particularly the fact that in gift

economies what drives the exchange is the accumulation of symbolic capital (e.g. recognition, honour, nobility, etc) means that community solidarity, trust relationships between participants and tolerance of phenomena of debt and dependency can be borne and promoted more in a gift economy than in a market exchange system. Gift economy has thus the potential to embrace and boost CCs by aiming to bring individuals together through a complex web of interpersonal relations, while economic activity relies to a great extent on community discourses espoused by all community members, and in order for the community to maintain its identity and to empower its workability in the long-term.

Trust and reciprocity in particular come to the fore in the literature (Uzzi, 1997) as core elements of socially embedded exchanges of goods and services which can exist with difficulty in purely market-driven activities. The elements of trust and reciprocity are those that enable networks of individuals or businesses to promote fine-grained information transfer and joint problem solving-arrangements (ibid). As empirical research in the fashion industry and in firms operating in this industry sector has shown, even businesses can develop social relationships within a broad network of organisational structures, allowing trust to operate as a ‘governance structure’ that goes beyond calculative estimates and increases business opportunities, access to resources and flexibility of the firms involved (ibid). The notion of trust in this framework is particularly useful to the notion of CCs in DBEs, since trust is presented as freely developed and reciprocated, on the one hand, and with no formal enforcing mechanisms in place (i.e. contracts, fines, etc), on the other hand. This fits perfectly the framework of ideas and principles of CC systems and provides, in addition, examples of how trust can work within originally competitive business networks, facilitating cooperation, resource exchange as well as fast and adaptive joint problem solving (ibid: 43-7). This conceptualisation of trust in socially embedded economic activities is mostly proposed when it comes to exchange of goods or services the economic value of which is difficult for someone to calculate (e.g. cultural goods, intellectual products, etc) (ibid: 43). This also makes sense if someone looks at CC systems, as the currencies themselves are not valued by market exchange criteria, whereas in most of the instances of such systems the goods and services exchanged are considered to be ‘ideologically loaded’ or ‘alternative’, while they contribute to social network building.

Regardless of what Uzzi (1997) argues about the potential development of social ties among businesses, the participation of business actors in DBEs raises the question of how loose and self-evolving mechanisms of employment of CCs or other gift exchange-based mechanisms will apply, as businesses can hardly overlook goals of self-centred economic profit and interest. This raises in turn the issue of whether a more formal regulatory framework for CCs may be needed in DBEs, in order for firms to comply with rules of reciprocity and sharing. This may violate basic principles of CCs and therefore specific case studies and possibilities of CCs in DBEs should be looked at more carefully in Phase 2 and in connection with the work done on trust and regulation in the DBE project.

On the other hand, the rather loose character of the agreements that bring people together in a CC system implies that there are issues to be encountered with respect to possible opportunistic behaviour or defection

by some community members, issues that may put the sustainability of the community at risk. These are issues raised above in this document and which will be dealt with in the second phase of the research. It is rather important to stress at this point that accounts of embeddedness of economic action in social ties and structures often raise issues of altruism, reciprocity and generosity in exchange as frequently deceptive, challenging thus arguments that support the morality and ethos of socially embedded economic structures, like CC systems and the overall framework of the gift economy system of exchange. In addition, there are analyses that warn about the paradoxical and inherently contradictory consequences on the economic activity of individuals and organisations. For example, Uzzi (1997: 52) attempts to shed light on the paradox of embeddedness, arguing that although economic exchange that is based on social relations and structures can establish trust relationships and facilitate, through reciprocity and cooperation, social structures resource exchange, risk-taking and economic investment activity that market economies cannot promote to the same extent, social or community ties in economics present certain weaknesses. Based on empirical data collected from the fashion industry, Uzzi (1997: 57-60) concludes that, paradoxically, embeddedness may reduce a business organisation's ability to adapt to the change in the economic or societal conditions within which the firm operates. He argues that this can happen either because the organisation is dependent on the ties to other organisations (e.g. resource dependency) or due to 'overembeddedness', as new collaborations or networks are excluded by the existing members of a fixed network of collaborators due to limited links to outside environments. Therefore, he argues in favour of a mix of market and socially embedded economic ties (ibid: 59) which is rather close to what we have presented in this report as complementary CC systems.

Nevertheless, as Bourdieu underlines (1997: 231-2), gift economy is a system of exchange, as it does not entirely exclude awareness of the logic of exchange or the gifter's expectation of reward or benefit in return, since the selfish character of human nature cannot be ignored. It only masquerades this 'dual truth' of the underlying exchange canons through the time lag between inalienable gift and counter-gift and on the ground of the prevalence of the ideas of generosity and symbolic capital in the system. Likewise, CCs rely on the principles of morality, reciprocity and obedience of self-interest to the community good, whereas they still constitute an exchange system where symbolic capital increases and social bonds are strengthened. On the other hand, in CCs there is no time lag in the series of exchanges (unless a transactor is unable to provide the currency or the good/service exchange immediately, the transactors are not absolutely alienated from the goods/services given away, and what prevails is the community-oriented purposes of the exchange act per se. Nevertheless, both in gift economy and CC systems the sustainability of the system presumes the absence of opportunistic behaviour and defection, whereas the potential insufficient character of such a system (for instance, spectrum and level of organisation as well as scope of exchange) may put further challenges for the functionality and sustainability of both systems.

In terms of structures, gift economy exchange is an alternative economic system which is based both on specific tangible structures and on embodied structures of intentions and ideological armouries (Bourdieu, 1997: 232). Similarly, CC systems require an organisational model and a structure of activities and

management, while their viability and sustainability in the long term closely depend on the embodied and tacitly respected structure of ethical rules and community-driven motives in the system. On the other hand, the gift economy system brings to the fore the idea of exchange as aiming not to economic profit but to generosity and the accumulation of symbolic capital, highlighting thus the notion of social embeddedness and construction of economics through the transmutation of economic capital into symbolic capital (ibid: 234-5). This can be seen in parallel to the framework of principles of CC systems. As underlined in the previous sections of this report, the employment of alternative currencies which are issued by and used within the community aims not to profit, as this is understood by economic analysts of the market exchange system. On the contrary, CCs are employed in order for the community exchange system to be boosted, the community businesses to develop, and the community members to come closer to one another, making up for the risks and failures of the market exchange system. In addition, CCs can operate evenly only if symbolic capital, such as trust, reciprocity and accountability, are well established, and if social ties and bonds among community members are well maintained. Hence, to the suggestion that ‘whether generosity and disinterestedness are possible should give way to the political question of the means that have to be implemented in order to create universes in which, as in gift economies, people have an interest in disinterestedness and generosity’ (ibid: 240), this report responds that CCs provide the necessary space for such means of implementation to be employed.

Hence, the idea of the gift economy provides the appropriate framework where actors can agree to honour the system of CCs and where a range of opportunities and challenges arise; opportunities and challenges that raise questions of both morality and mechanisms of enforcement. Particularly in a DBE environment where the connection between the gift economy and business models is made on the basis of the business appropriation of F/OS, the CC research should draw on a gift economy framework to discuss and analyse specific business models in Phase 2. At this point, we should look at how the advent of networking technologies has opened up new horizons of development and expansion for the gift economy (Barbrook, 1998; Leyshon, 2003; Veale, 2003), as well as how this development has in turn facilitated the establishment and long-lived activity of CCs beyond the strictly defined local or regional scope of community building and exchange. Internet gift economy, ‘the free sharing of ideas, information, and other intangibles (including, notably, software)’ (Fox, 2005), enables the exchange of multiple and sector- or region-specific goods, knowledge or services, fitting the notion of CCs in DBEs.

Nevertheless, the Internet gift economy and its operability for online CCs deserves further examination and is therefore discussed in more detail in what follows.

6.4 Gift economy, technology and online CCs: prospects and challenges in Internet gift economies

New networking technologies and the Internet come to mediate the idea of gift-driven exchange, assigning to the latter new scope and potential. More specifically, the gift economy, namely, the exchange of objects

with intrinsic value which does not take place immediately and without accumulating interest, is substantially facilitated through cyberspace. Although the gift economy is increasingly diffused through Internet-based transactions (Fox, 2005; Veale, 2003; Leyshon, 2003), the Internet architecture per se is rather semi-gifting. Leyshon, for example, investigated peer-to-peer file exchange as an example of how Internet-based gift economies can fight 'copyright capitalism' and came to the conclusion that this online gift economy challenges current frameworks of governance and regulation in market economies, although it does not bear all of the typical characteristics of gift economy, particularly the characteristic of inalienability of the objects exchanged, (2003: 46)³⁰.

The Internet is a space where diverse forms of gift economy exist, is a 'mix of the "free and the fee"' (Veale, 2003), where gifting of digital goods, resources and information takes place in online communities and spaces as an extension and evolution of offline gifting and through the enablers of low-cost, mass-publishing and mass-reproductive nature of the Internet (ibid). The gift culture drives the formation of diverse gift economies and has a significant role to play in online collaboration and P2P exchange in the computing world. This can be in the format of code development in Free or Open Source software as well as in the information-sharing part of the online exchange, such as web pages, newsgroups, e-mails, MP3's, blogs, wikis and newfeeds. The Open Source/Free Software community, where source code is accessible and subject to development by anyone who participates in the community, is one of the most rapidly developed high-tech collaborative communities where gift culture and the specific set of values and norms of the gift economy system are employed. In the Open Source community, individual contributors gain prestige and respect, and the community as a whole benefits from better and continually evolved software. Another example of gift culture is music downloading, according to how Markus Giesler (2006) has developed in his 'Consumer Gift System' as a system of social solidarity based on gift transactions. Sharing of electronic tokens in social networks using I-mode phones in Japan (Rheingold, 2002), bluetooth, and web-based video sharing (i.e. YouTube) are some more examples where resources, information, services and a wide range of digital goods (music, literature, movies, software, etc) are gifted and shared through the mediation of networking mobile and Internet technologies.

However, we need to distinguish the idea of gift economy as an exchange system from the high-tech gift economies. The goals and characteristics differ, while both types of gift economy are, in one way or another, contrasted with market capitalist operating economic models. As Leyshon (2003: 43) remarks, high-tech gift economy is seen by its supporters as a precursor to a more distributed, more efficient market economy, whereas examples of high-tech communities, like MP3 exchange, do not meet the criteria for the typical gift economy system such as the exchange of inalienable objects between interdependent transactors, as they are impersonal and anonymous communities (ibid: 44-5). Also, P2P systems seem to bear the criterion of temporality of the exchange but in an institutionalised form (ibid: 45), while for the

³⁰ Nevertheless, statistics had shown that gifting in Europe and the US covers between 3-4.3% of the overall consumer spending only (U.S. Bureau of Labor Statistics, 2003).

third criterion of accumulation of symbolic capital Leyshon (ibid: 45) examines specific cases, arguing that Internet Relay Chat (IRC) exchange and the distributed P2P systems of Gnutella and Freenet bear this characteristic, but not the MP3.com which is a loose network held by hobbyists and hackers, nor Napster which contributes to the accumulation of economic capital. On the other hand, the gift economy underlying F/OS should be viewed as distinctive to the one underlying file-exchange, as it requires a higher degree of technical knowledge for participation and it is a highly political project (Leyshon, 2003: 42). In this sense, the “gift” in F/OS represents a higher investment than simply uploading or sharing a file in a peer-to-peer network, being thus connected to commercial purposes.

Regardless of the wide range of online-based gift economy systems, new technologies provide new spaces and more flexibility for gifting, with the latter entailing significant implications for future technology design development (McGee and Skageby, 2004). The gifting of ‘expertise’, ‘artifacts’ and ‘resources’ in online gifting systems provides thus a vast terrain for future research on gifting motivations arising in and through technology, on related mechanisms and technologies facilitating gifting, as well as on new developments in the technology design for gifting, through gifting and because of gifting: ‘...the research to date suggests that there are good reasons to begin looking at technology design “from the gifter’s perspective”. There seem to be fundamentally different technology needs and design problems that appear when a designer looks at the world from the perspective of someone who wants to gift’ (ibid).

In the CCs domain, and on the grounds of the major gift economy principles, LETS systems,³¹ Ithaca Hours,³² Salt Spring Island Dollars,³³ STROhalm³⁴ and Brazilian Educational Currency Saber³⁵ are some examples where CCs are Net-based and develop on the grounds of a mixed Net economy. In this domain, capitalist commodity and hi-tech, gift economy-based systems operate in symbiosis (Barbrook, 1998) and the operation of some of these examples will be examined in detail in Phase 2.

On the other hand, certain challenges arise in online gifting as a result of the anonymous, asynchronous and space distant mode of gifting on the Internet. More specifically, there is literature arguing that returned intangible rewards on the grounds of reciprocity and altruism are not adequate so that gifting economies are sustainable in online spaces. Thus there are those who suggest that intangible or ethics-based rewards, such as a pride, reputation and self-esteem, are not sufficient incentives, and that in order for Internet gift economy members to keep gifting, reciprocity should be pursued in voluntary payment schemes and tangible rewards in the form of monetary, content and purpose gifting (Veale, 2003). As Leyshon (2003: 49) remarks, both high-tech online collaborative communities and projects that aim to employ alternative currencies, such as LETS, face the same weakness stemming from the lack of massive participation and from the contribution of only a small core of activists who disproportionally attempt to bear the burden of reproduction.

³¹ www.gmlets.u-net.com

³² www.ithacahours.org

³³ <http://saltspring.gulfislands.com/money/welcome.htm>

³⁴ www.strohalm.org/vlcs.html

³⁵ [http://www.uea.ac.uk/env/ijccr/abstracts/vol10\(3\)lietaer.html](http://www.uea.ac.uk/env/ijccr/abstracts/vol10(3)lietaer.html)

More specifically, the prerequisites of trust and community identity that drive the gift economy and the community currency systems themselves become conditions of uncertainty in Internet mediated sharing where mediation, anonymity and distance prevail. Also, anonymity and identity protection, asynchronous communication, copyright issues, advertising ineffectiveness and ‘lurking’ may delay or even weaken the principle of reciprocity, which constitutes the fundamental element of the gift economy with the latter becoming hardly quantifiable (ibid). These are, of course, issues that require further elaboration and empirical investigation that will go beyond the level of the descriptive observation.

For the moment, it can be argued that prospects and challenges go hand in hand in Internet gift economies, driving experts and practitioners to talk about mixed systems of gift and exchange economy on the Internet, in the same way that CCs often operate as complementary currencies that exist in parallel and complementarily to regular national currencies. This ‘mixed’ economy (Crawford, 2001) idea where commodity and gift relations are not in conflict but co-exist signals a rather oxymoronic symbiosis between capitalism and digital anarcho-communism (Barbrook, 1998). This symbiosis seems to serve the nature and characteristics of Internet-mediated communications, as well as the empirically evidenced functionality of CCs and under the task of applying the latter to business actors in DBEs.

This mixed system has come specifically to be proposed with respect to Internet-based exchange and gifting, in the form of volunteerism to retain the gifting and reciprocal spirit of the gift economy and in the format of content or purpose gifting to provide tangible rewards to gifters. Content gifting can include a wide range of content types and sources, whereas purpose gifting can be in the format of wish lists such as the Amazon Wish List where the products themselves constitute the reciprocity (e.g. GIFTegrity system) (Veale, 2003). Such types of tangible reciprocity in Internet gift economy examples are of particular relevance to the idea of CCs for DBEs, as they provide flexibility as do particular types of currencies, content or business ideas and purposes to be gifted and shared on the basis of reciprocity and through tangible rewards of business actors. Hence, the idea of tangible reward systems could encounter the challenge of attracting business actors in community currency systems – a challenge discussed extensively in previous sections of this document. This encounter could be achieved through providing various rewards for gifting and by exchanging alternative types of currency, content and information, such as reputation, business synergies and prospects, as well as practical or even monetary gains.

However, the connection between the gift economy and business modelling of CCs will be developed further in Phase 2, where more concrete examples of and what is to be gifted/reciprocated and by whom and what is to be appropriated and by whom in CC systems for DBEs will be provided. This will drive the research to elaborating a framework for understanding the different types of gift economies and opportunities for exchange and appropriation that may arise in DEs (e.g. between academics and researchers, online collaborative communities, governmental agencies, etc) and in the context of DBEs in particular (e.g. between businesses) and with regard to the usage of alternative currencies.

7. Concluding remarks and work to follow in Phase 2

This document sets the foundations of the research on CCs for DEs, and for DBEs in particular. It also brings up the major issues that the research will substantially and partly empirically look at in Phase 2 of the project. These are primarily issues concerning the benefits and challenges deriving from CCs for DBEs, as well as the complex interaction that CCs can develop with fundamental elements of DBEs, such as trust, business exchange and the ‘moral economy’ elements of the open source character of DBEs. From the discussion delivered in this document, it can be concluded that the following research areas will constitute the main axes of the research that will follow and will be communicated to other tasks and WPs in Phase 2 of the project:

- *Trust and accountability in CCs for DBEs: the question of regulation.* This research area brings up issues of trust and accountability, the question of regulation and the linkages with the research carried out in the DBE project. This area will be explored taking into account the work done in the DBE project, as well as the work of T12.2 and T12.3 in WP12. The work being done in WP5 and T5.4 on accountability and trust subsystems could also be useful, particularly from an implementation perspective, while the trust, regulation and governance implications to be concluded in ‘Community Networks in DEs’ (T12.5) are also of interest to this task.
- *Language, symbolic discourses of CCs & other ‘languages’ (in DEs).* Issues to be researched in this area are the compatibility and interactions between language(s) in DEs in general, as well as the contribution of a language approach to the establishment of CCs and trust relationships in DBEs in particular. This area will be researched in conjunction with the work being done in WP6, with the emphasis given to the social constructivist attributes of language in the everyday life and in the specific context of DBEs.
- *Gift economy framework and business models of CCs for consideration:* This research area will look deeper at prospects and challenges in gift economy frameworks with regard to CCs in DBEs. This is a research area to be closely connected with WP11 and the work that will be done on knowledge economy and regional development in Phase 2 of the project.. Case-focused research and analysis of business models will be conducted, with particular emphasis placed on CCs where Small and Medium Enterprises (SMEs) participate (e.g. Swiss WIR system) and where online or digitally mediated modes of exchange are present (e.g. e-LETS, and to a lesser degree digital spaces such as ‘Second Life’). The cases studies to be looked at in Phase 2 will allow the task to discuss concrete business models appropriate for CC systems in DBEs and in a gift economy framework of principles and values.
- *Implementation of CC systems in DBEs.* This is a rather ambitious research area, which is for the moment rather loosely articulated as part of the overall vision of the task. This is a high-level aim to

be substantially filtered and elaborated when the theory- and case study-oriented part of the work will be mature enough.

- *CCs, Associative systems and autopoiesis*: in order for the integration with WP12 and the overall social science part of the work in the project to be achieved, the task will point to the self-evolving and autopoietic elements of CCs. The task will in turn contribute to the joint social science deliverable D12.1 on the ‘Foundations of the Theory of Associative Autopoietic Digital Ecosystems’, contributing specifically to the discussion of cyberegulation and CCs on the ground of systems theory and autopoiesis.

From what has been argued in this document, it becomes obvious that in order for the above research areas to be pursued as appropriate, integration and close communication with other tasks and WPs are needed. This collaborative strategy will also enable the research to benefit with regard to issues at stake and in order for the overall project vision of integration of the work carried out in different disciplines and areas of interest to be achieved. On the other hand, this task is meant to be open to new collaboration opportunities that may arise in the future, while Figure 4 summarises the collaborative mechanisms through which this task will attempt to attain the in-depth and partly empirical exploration of the above outlined research areas. Figure 4 is rather self-explanatory, naming, on the left hand side, the tasks and WPs that community currency research will work with closely and providing a brief description, on the right hand side, of the issues to be collaboratively looked at with the respective tasks and WPs.

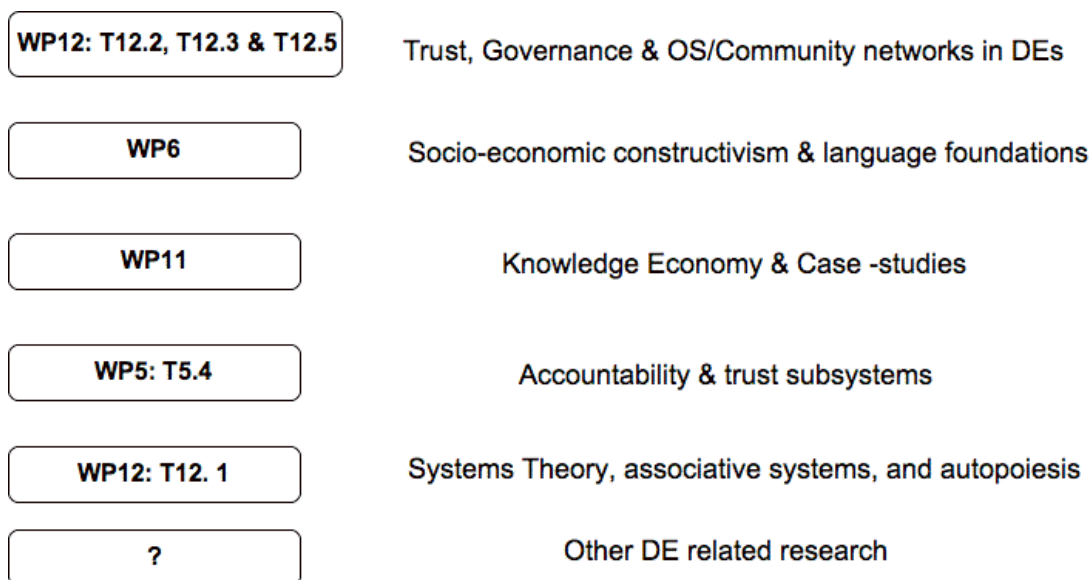


Figure 7.1: Linkages to other tasks and WPs in Phase

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