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## WEB REACTIONS AGAINST CAPITALISM. THE CASE OF WEB CURRENCIES

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**ABSTRACT**

The development of the World Wide Web coincided, from an historical point of view, with 90s financial crises, which were overcome not so much by the financial markets, but by diminishing trust and support of the market trade as much as before. This trust has collapsed again with the 2007 crisis. These last twenty years have been an endless succession of hope and collapse: hope has often come from the Internet, at first with the new economy hangover and, today, with Social Media.

Web characteristics' and hacker's ethics support the growth of so called gift economy (Barbrook 1998; Ghosh 2005). So, is the Web a place where fictitious commodities considered by Karl Polanyi, labor, land and money can react against capitalism? And in particular, the rise of alternative and complementary currencies can find new diffusive and innovative experience through informatics platforms?

This paper explores these questions from a Polanyian perspective.

**Key words:** Polanyi, Fictitious commodities, Money, local currency, Bitcoin.

## INTRODUCTION

The current global economic crisis is not merely financial, but has a systemic structure.

If we focused on monetary aspects of crisis we can consider that it is as an expression of the historical cycle of credit and debt. The removal of political controls over money in particular since 1971 with unilateral abolition of Gold Exchange Standard by US President Nixon, has led to a situation where politics is still mainly national, even if the money circuit is increasingly global and lawless. Monetary crisis since 90s should be seen as the collapse of national capitalism when a lot of monetary crisis shook Italy, UK, Mexico, East Asia, Brazil, Russian Federation, Turkey, Ecuador, Argentina and Uruguay. National capitalism" was the combination of nation-states and industrial capitalism. Its main symbol has been national monopoly currency (legal tender or central bank money). It is the institutional attempt to manage money, markets and accumulation through central bureaucracy within a cultural community of national citizens (Hart 2009). In Polanyian prospect we can also consider the other side of the so-called "double movement" and we can find it in the birth of Web, a cultural artifact build up based on sharing, with content evolved from "domination by academia" where the sharing and citation was an informal circle of gift (Nielsen 2000). But Internet is now changing a lot: it is a complex and variegated phenomenon, a constellation of places where it's possible to recognize modern kind of gift and sharing economies (Aime and Cossetta 2010) as well as neoliberal digital capitalism. In any case, the Internet is helping to transform our conception of space, labor and market, the three Polanyian fictitious commodities. If we focused on money, the Web is facilitating the spread of alternative, complementary and local currency, and in recent years is producing experimental web-based coins that aim to challenge centralized authorities.

## 1. DURING THE 90S: THE BIRTH OF WORLD WIDE WEB

Between 1989 and 1998 Tim Berners Lee, Robert Caillau and other colleagues of CERN (European Council for Nuclear Research), developed a technology to discuss and collaborate among scientists, the World Wide Web. They have to share information, data, comments, interpretations even if they are in different countries of the world so they invented and refined the hypertext Transfer Protocol (HTTP), for linking Web documents, the HTML for formatting Web documents and the Universal Resource Locator (URL) system for addressing Web Documents (Alesso and Smith 2006). It was an easy-to-learn document coding system that allow user to click onto a link in a document's text and connect to another document. The Tim Berners Lee approach was based on collaboration: "it is doubtful that many of the public perceived that the Web was an infrastructure to support collaboration" (Rios Insua and French 2010: 156). The ideology of early users of Web was also based on so called Hacker's Ethics formerly formulated by Steven levy's 1984 books, Hackers: Heroes of the Computer Revolution. Levy came up with six principles: 1) Access to computers - and anything which might teach you something about the way the world works - should be complete and total. Always yield to the Hands-On imperative! 2) All information should be free. 3) Mistrust authority - promote decentralization. 4) Hackers should be judged by their hacking, not bogus criteria such as age, race, or position. 5) You can create art, truth and beauty on a computer. 6) Computers can change your life for the better.

In five-six years this system moved from the scientific community to a wider public and then exploded into business communities and now in everyday life of over two billions of users. People start to share not only information and documents, but also skills and capacities. The 90s delivered the long promised Information Aged with many important news and projects such as

Gnu System, Linux, Napster but also Hotmail, E-bay, Yahoo and so on. By the end of 90s the Web became a place to shop but also a place where you can produce free artifact in a collaborative way. From 1997 to 2000 the value of Internet stock market price rise quickly; it was a boom: a dot.com mania. It was a period of enormous contagion of optimism, constantly changing opportunity, ad hoc organizational structures, highly mobile workers, massive early investment (Niederman and Ferratt 2006). Investors wanted big ideas more than a solid business plan. Buzzwords like networking, new paradigm, information technologies, consumer-driven navigation, tailored web experience, and many more examples of empty double-speak filled the media and investors with a rabid hunger for more. The IPOs of internet companies emerged with ferocity and frequency, sweeping US up in euphoria. Investors were blindly grabbing every new issue without even looking at a business plan to find out, for example, how long the company would take before making a profit, if ever.

## 2. FROM 2000 TO NOW

The crash of the dot.com bubble marked a turning point for the Web. On March 10, 2000, the Nasdaq peaked at 5,132.62. "Then it promptly nose-dived, never to see that level again. Here's a look back at the era that launched — and crushed — a million dreams" wrote Wired, the famous magazine on technology.

Many people concluded that the web was overhyped, when in fact bubbles and consequent shakeouts appear to be a common feature of all technological revolutions. Shakeouts typically mark the point at which an ascendant technology is ready to take its place at center stage (O'Really 2007). It is not unsurprising if Manuel Castells (2000b: 28) write that "at the end of the twentieth century, we lived through one of these rare intervals (of major change) in History. An interval characterized by the transformation of our "material culture" by the works of new technological paradigm organized around information technologies". Still in 2000 the Web react to the dot.com bubble burst with a return to "ancient" and romantic principles of early. In this year, in fact, started two important initiatives: The Cluetrain Manifesto and Nupedia that in 2001 changed her name in Wikipedia. In the Cluetrain manifesto: a radical set of 95 marketing thesis made by several marketing masterminds. The idea of Cluetrain Manifesto was simple but very powerful: markets are conversations and hyperlinks subvert hierarchy. Internet has radically reframed the seemingly immutable laws of business, and and what business needs to know to weather the seismic aftershocks (Levine *et al.* 2000, 2009). They ask to business system to make a revolution: with the Web brands has to communicate honestly with consumers. They predict the explosion of social media and many of the changes that companies have experienced since the thesis appeared on the Net and then in a old fashioned book form.

In March 2000 Jimmy Wales and Larry Sanger launched in the Web Nupedia, a free encyclopedia. Contributors were selected experts in their particular field of knowledge: academics, scientists and researchers, with a peer-review system of acceptance of lemmas. It was an online encyclopedia comparable to a published one with the specific aim of objectivism: "neutrality required that articles should not represent any one point of view on controversial subjects, but instead fairly represent all sides" wrote Sanger in the web site of Nupedia. But it was a flop and in 2001 it was replaced by a new project, apparently not so expensive and complicated, Wikipedia. In Contrast to Nupedia, Wikipedia was an instant success and it shows important implication on the so called "gift economy". In Wikipedia contributors come not from an established and recognized group: they come from people who have knowledge and skills but are often not heard (Schlie *et al.* 2011): philosophy of Wikipedia is summarized by Wikimedia Foundation: "imagine a world in which every single person is given free access to the sum of human knowledge". There is an ample debate about accuracy of Wikipedia, but it's certainly the

world's largest collaboratively edited source of encyclopedic knowledge. Some researches show that the success of Wikipedia results from a "wisdom of crowds" type of effect in which a large number of people each make a small number of edits, even if at the beginning of the project only a core group of "elite" users do the lion's share of the work (Kittur *et al.* 2008). Wikipedia is a social system, with rituals, hierarchies, internal dynamics: the system seems more oriented to appeal to specific experience of collective intelligence then individual ones. So it's possible that a single "faithful" of a faction revises an entry written by a scientist. Wikipedia is a collective effort of disclosure: we used to having free access to updated information and also to horizontal and flat knowledge structure.

From 2000 to now the number of Internet users rise all over the world and in 2011 exceeded 2 billion. Many things change in particular in relations between production and consumption in Internet content, but also in new democratization rhetoric, in perception of private and public, in cultural digitization (Beer and Burrows 2007). In particular this years are characterized by the rise of social media: the Web now is a marvel of crowdsourcing, with marketplaces such as those on eBay and craigslist, mixed media collections such as YouTube and Flickr, and the vast personal lifestream collections on Twitter, MySpace, and Facebook. Social media now influenced our lives in many ways. Through technology, we have become more individualized and separated, however, we have the ability to communicate relationally.

In times of deep financial and social crisis as this we are living, people seek new ways to meet needs and even to re-embedding economy in society. The consequence is a return to communitarism or to a vernacular forms of markets, as well as an increasingly afterthought related to ethical implications of acting utilitarian (Occupy Wall Street movement, is an important example in this sense). People even call into question one of the pillars of capitalism: labor, land and money as commodities (Polanyi 1944). So it increases the charm (and the need) of effectiveness and personalization of the gift, it re-invented form of barter, swap and share.

## 3. WE TRUST IN INTERNET

The so-called Web 2.0 seems not only to transform and affect labor, land and money, but also to be a self-defence instrument that the society can rely on against modern capitalisms. It is no longer only the hacker philosophy, or the niche of free software movement (Aime and Cossetta 2010), but rather our daily life.

A 2008 research by Pew Internet and American Life Project showed that more than two-thirds of American citizens have turned to the Net to solve economic problems that the recession has caused, to find new work opportunities, or to manage the family budget and savings.

For other people, the Internet has been a work opportunity: for example, for the networkers, most young people have a creative profession such as web marketing, advertising and design. They tend to become network citizen (Castells 2000), or nomad workers (Beaverstock 2005), often "happy and exploited" workers (Formenti 2011).

In the same way, the Internet, and in particular mobile access, has modified the concept of space: it becomes an expanded area encompassing imaged and physical places.

Online retail in both the US and Western Europe continue a double-digit growth trajectory according to Forrester Research (2010): despite the economic crisis there is trust in Web. Indeed, trust has become the cornerstone of relational Web mechanism, the infrastructure supporting Web exchanges. Online sharing in particular, supported by peer-to-peers system and

many other platforms, seems to encourage people to share also offline because in online contest they are learning to trust each other[1].

Trust in fact, is a way to reduce complexity in a situation of risk and uncertainty (Luhmann 1989), simplifying the number of choices of action.

In Internet trust has witnessed a profound change. Trust no more in official authorities, not more in the future, not more in homo oeconomicus. Trust became a synonym of recognition.

Wang and Emurian (2005) trace the nature and concept of online trust found four characteristics of trust that are generally observed and accepted by researchers: (1) A trustor and trustee – there must be two parties; (2) vulnerability – trust is only needed in an environment that is uncertain and risky; (3) produced actions – trust leads to actions and these are mostly risk-taking behaviors; (4) subjective matter – it is directly related to and affected by individual differences and situational factors.

Online trust shares similar characteristics as offline trust but with some important distinctions unique to an online environment: (1) trustor and trustee – typically the trustor is a consumer and the trustee is the Web site; (2) vulnerability – due to the high complexity and anonymity associated with e-commerce, merchants can behave in unpredictable manner and consumers are often uncertain about the risks and consequences; (3) produced actions – two types are making a purchase and window-shopping and the consumer must be confident that they have more to gain then to lose; (4) subjective matter – people differ in their level of trust considered sufficient to make online transactions.

In that sense the example of Ebay is instructive. On logging into eBay, users are directed to their interests to a process of interactive flows, learn to absorb the rules and practices of the site, and are socialized into its institutional practices. To eBay tracks and publishes the reputations of buyers and sellers on the basis of feedback transaction. In a controlled experiment of eBay transactions, buyers bid an average for goods listed by repeat sellers who had good reputations (Resnick *et al.* 2004).

Online platform permit in fact allow to support and guide trust thanks to application of bayesan theorem. In the Web it's possible to find continuous ratings in binomial (positive/negative), multinomial (mediocre, bad, average, good, excellent) or narrative reputation system. Also P2P platform systems are programmed to get people to trust, even if in some cases free riders assumption might be preferable.

The web seems therefore the ideal place to trust and to build recognition, not only because the offline world is increasingly hostile, but also because the web is a network of relationships is forged and shaped in order to build trust. Communitarian rationality is not imposed from outside, by institutions, but is learned through digital socialization. In this sense we could say that the Web appears as a cultural artifact that expresses the contemporary reaction against capitalisms and fictitious commodities described by Polanyi. Web and capitalism extraneous, but they live in a continual tension between complementarity and otherness: paradox very similar to that

[1] A significant researche made in 2010 by Latituted Research and Shareable.net show that 78% of participants felt that experiences the've had interacting with people online have made them more open to the idea of sharing with strangers, and 75% of participants predicted that their offline sharing will increase in the next five years. The most popular perceived benefits of sharing were "saving money" and "been good for society"

between gift and market.

## 4. MONEY IN THE NET

Online money has been completely deprived of its materiality: a process speeded up and expanded by the rise of the Internet, but that was born since the onset of credit cards that contributes to the growing of volatility of identity (Hart 2006). In last decade non-cash payment increased about 5% annually in the U.S., and in June 2011 PayPal crosses first 100 Million active accounts. You can pay through many smart cards technologies: you can buy and you can sell just with digital money. Dematerialization of money means not only the loss of importance of money, but also a significant erosion of symbolic dominance.

The failure to address the immanent source of the problem precipitating the crisis -- the default on underlying mortgages -- and instead focusing on the financial institutions (whether it is through "bailouts," regulation, or investigation of "fraud") is a demonstration of the shift that has occurred from a physically productive economy to one based on semiotic manipulation (Betancourt 2010).

No wonder the rise of use, since 90s, of alternative, complementary, local or community currencies (North 2010) swap meeting and in recent years web money. The web is central: it informs people about market niches and alternative forms of exchange but also is a powerful aggregator of practices, solution, storytelling, networks previously scattered throughout the world. The Web can be also the place where built new experience in co-exchange and collect them in data banks, online magazines and not to mention the countless blogs and forums.

## 5. "OTHER CURRENCIES": SOME HISTORIES AND DEFINITION

The so call alternative or complementary currencies were born a long time ago. They lived before, alongside and alternatively to legal or national currencies. As explained David Graeber in his corrosive and interesting "Debt, the first 5000 years (2011), the exchange market and finance, were born about 3200 years ago in Mesopotamia, while the money raised much later, probably in the VI. B.C. in Lydia, Modern Turkey. Since the, examples of economies without money were a lots: from the "imaginary coins" (florins, lire, ducats, crowns, pugs and so on) or "lower money" that banks and legal system accepted since 13$^{th}$ century and for many centuries after in Venice and in many other Italian Cities in debt crisis. This it was possible thanks to the double entry accounting system invented also in Italy by the Franciscan Friar Luca Bartolomeo de' Pacioli (1446/7-1517). Outside Italy, the appearance of alternative or complementary currencies is late and connoted by an utopian ideology. One of the first initiative was made by Robert Owen in the 1830 and twenty years after, the Josiah Warren's time bank in Cincinnati, US. Josiah Warren later set up also two intentional community in America (Modern Times and Utopia) which traded labor notes (Woodcock 1963; Kantor 1972). In the 1840s, in France, Proudhon developed ideas of mutual exchange based on labor theories of value from local experiments into a fully-fledge proposal of Banque du peuple (North 2007), a credit bank without interest rate, a sort of mutual cash created by workers themselves, that thereby eliminate the State. In 1934 some Swiss entrepreneurs, were confronted with inaccessibility of bank and suppliers credit. They try to reproduce Silvio Gesell thesis and founded Wir Bank (Wir means We in German). This is an extremely interesting example, the largest and most successful one, of mutual credit among firms that contributes also today in economic stability of the country especially when cash flow problems (Stodder 2000) are spread in national economies. Companies in Wir circuit may choose to collect payment charging in Wir, that are always available, but just in credit e not in debit. Wir requires that account balances be secured,

typically by the pledge of real estate (usually in the form of second mortgage on the member's home) (Greco 2009). Thus, the Wir is a business-to business currency, and already exists alongside the Swiss Franc. The system works successfully in 1930s and also now: today there are more then 60,000 members, 1/5 of total SMEs in Switzerland and the value of the Wir is now pegged to the Swiss Franc.

The most recent economic imbalances and in particular monetary crisis in 90s, have promote a rise of complementary and community currencies all over the world: in some cases, as Argentina, local currencies became a way to reinvent market during and after the financial collapse. In this decade we assist at the growth of Time Banks, Lets (Local Exchange Trading System) particularly popular in the United Kingdom and in other Commonwealth countries, SEL (Système d'Echange Local) common in France and Belgium, SEC (Système d'Echange Communautaire) in Senegal, Ithaca Hours in new York, Red Global de Trueque (RGT) in Argentina, Fureai Kippu in Japan, Ecoaspromonte and SCEC in Italy, Regiogeld in German, Eco-Pesa in Kenya and so on. This systems are community based network, with a strong connection with a territory where an original currency, an account book or a cheque is locally produced as a means of exchange for goods or services among members at the levels of individuals, groups, local communities, and SMEs (Allen *et al.* 2002; De Meulenaere 2003).

Scientific literature in fact consider complementary and local currency from four perspectives, a instruments to: enhance economic efficiency, promote new forms of entrepreneurship, and organize economic activity in areas suffering from the existence of a unique monetary instrument (Lang 1994); create and distribute social capital, developing trust-based relationships, promoting co-operation and strengthening existing networks (North 2001); organize emerging forms of nonprofit activity, and even public welfare, based on self-help and mutual assistance (Douthwaite 1999); support community development, e.g. for the relocation of economic activity in the perspective of self-sustainability (Amato and Fantacci 2009).

In the majority of cases these are local or regional currencies and this category can be also differentiate among territorial from community monetary localism according to the area of application of a monetary system (Blanc 2002). Territorial currency in that sense, describes geographical boundaries; for example a town or a region as in Ithaca Hours and Ecoaspromonte. Lets, Sel and Trueque instead, are examples of community monetary localism because are instruments exclusively to voluntary participants of the community. In some cases restrictions are not geographical but sectorial as in Fureai Kippu (only facilities in hosing and ancient care). Lietaer (2001) consider "complementary currencies" system that intended to complement the existing order of national and supranational currencies because this existing order was incomplete. It's very difficult to have a definition of this kind of currencies (Schroeder, 2011): together with other forms of an alternative economy, these may be considered part of a third sector (Williams *et al.* 2001), of a solidarity economy (Hintze *et al.* 2003), a social economy or may be described as social money (Blanc 2006), but the process is ongoing and if we consider also web money the perspective has to be wider. What is important now is focus our attention on the connection between financial crisis, and rise of non fiat money, rise supported and implemented strongly by the Web.

Scientific literature seems to have undervalued (or not considered) the importance that the Web has had and has on the diffusion and implementation of community an complementary currencies.

In this perspective we suggest a categorization to evaluate this kind of currencies which is based on this consideration: 1) exchange mechanism is voluntarily within a particular community and

contributes to the growth of social capital; 2) there is no interest rate; 3) they appear as a conscious form of resilience against market exchange; 4) The Net is involved in all of this experiences.

## 6. WEB-BASED CURRENCY

Complementary currencies experiences have also found applicability in web-based system. The net can support this kind of money not only, as we see, with databanks, online word of mouth, blogs, online magazines and journals and so on, but also through ad hoc platform that made web-based currencies.

In the current Web Trust and Reputation can became the basis to build up new experiments in web currencies. The central point of digital currencies is what Tara Hunt (2009) called "The Whuffie Factor", inspired by a science fiction novel, "Down and Out in the magic Kingdom". New technologies have put human society on easy street, creating a fascinating social experiment called Bitchun Society (Doctoraw 2003). A striking innovation of this society is a reputation-based currency called Whuffie, which functions both as a universal metric of personal reputation and as a method of payment: in Bitchun society you can pay for the things toy want by debiting your reputation score, at whatever value it is currently assessed: reputation is cash (Masum and Tovey 2011). Whuffie factor in current Web can be a tool that measures contacts, networks, influence and trust in Social Media narration, a digital attempt to quantify the value of ties. The ideology of Digital currency movement was summing up into the Whuffie Manifesto:10 thesis of which the most important says peremptorily "*Because when reputation is wealth, only those who do good and well unto others are the richest".* Other thesis seems a response to the uncertainty of present financial crisis: 1) *because money as a contract for value shall be based on real value; 2) Because the word millionaire describes quantity and not quality, 3) because materialism is based on the empire of stuff, not people, 4) because the abundant oceans of information revitalize the role of talent, 5) because the impact of the Internet in the economic sphere is inevitable, 6) because all monetary systems evolved in parallel with the technology of its time, 7) because a world without frontiers requires a superior social and economic order, 8) because the privileges of media aristocracies will reach everyone, 9) because the price of materialistic consumption is a world at the mercy of its resources.*

In Whuffie Manifesto we can find "ancient" hacker's ethics and also a new conception of social "digital" capital. Trust and social capital are mutually reinforcing and bonding similar people and bridging between diverse people, with norms of reciprocity (Dekker and Uslaner 2001; Uslaner 2001); but in social digital capital we have to focus on reputation, a value build up in self centered networks. Reputation is a quantity derived from underlying social network, which is globally visible to all members of the network. Reputation can be considered as a collective measure of trustworthiness (in the sense of reliability) based on the referrals or ratings from members in a community (Josang *et al.* 2007). Whuffie manifesto at now is just a project but in the Net there are some increasingly interesting experience.

We can categorized three types of web-based money:

1) Micropayment systems,
2) Local web-based currencies,
3) Hacker currencies.

The concept of complementary currency has been used to build unconventional local environments such as iWAT, Samsara, Geek Credit, PPay, but also Paywithatweet. Despite several technical difficulties, this researches demonstrate that complementary currencies

provide an effective alternative charging mechanism within P2P[2] networks (Altmann 2010: 141). There are many examples of monetary systems based on P2P: this system can combine incentive mechanism based on reputation with a complex ideology related to horizontalization of network and decentralization of authority. In P2P systems cooperation can be sustained through barter: a reputation scheme for instance can also be used to identify, isolate and avoid malicious peers. For example, peer in the KaZaA file sharing network build up their reputation score by uploading files to others, and are rewarded with higher priority when downloading files from others (Nisan 2007). In P2P web monetary systems is not so easy: there is a necessity of cryptography and network security more and more problematical then in file sharing. PPay, for example, is a lightweight micropayment system: here the issuer of the coin updates a pointer to the new owner: transferability improves anonymity and performance the system but complicates the security issue. Similar to PPay are Millicent and PayWord where some users serve as a vendor and the others play the role of a buyer. Transactions occur frequently and the peers are often online, but this is possible only for micropayment (e.g. ten cents or one dollar). Researchers in software architecture propose many different protocols but is still true what Clay Shirky said in 2000: "users hate them". The trouble with micropayments, is that "users want predictable and simple pricing" and, as a result, "anyone who can offer flat-rate pricing becomes the market leader". Ten years after appears Flattr: a micropayment system in which a user joins the site and declares in advance the payment of a certain budget, in order to receive contributions as ebooks, videos, mp3 and other services. At the end of the month social money is smeared on the user who increase his own reputation thanks to click on appreciation of his contents. The community will regulate and determine who deserve what. This system can institutionalized thumbs up system, typical of some Social Media as Facebook and Digg, giving money to what people value most.

Micropayment are a reality in many blogs, games and Social media, but it's not a breakout performance; they stay in a micro niche of web market.

The second type of digital currencies is constituted by local web-based currencies. It's a web version of Wir Bank: a clearinghouse of credit and debts in an online ambient. The most interesting example in this case is Sardex, a digital document that is transferred from a company to another member of the community (B2B). A company become member and provide a fund of goods or service (generally unsold goods) and Sardex assign a credit line. In this way the company can buy everything share by other member (except gas, electricity, medicines and weapons The company has 12 months to pay off the circuit by selling its goods or services. System award transparent traceability: every transaction is made in online platform. Companies are just from Sardinia, where is a strong domestic market favored by geographical conformation of the isle. In two years Sardex.net increase its activity from 285.00€ of transaction in 2010 to 1.100.000 in 2011. This success leads to other ongoing experiences in Sicily and in France.

The most famous and controversial example of hacker currency is Bitcoin. This a completely digital exchange system, developed by Japanese (maybe, but most likely from England or Europe) Satoshi Nakamoto in 2009 and then implemented by other programmers. Bitcoin is a

[2] Peer-to-peer (P2P) computing or networking is a distributed application architecture that partitions tasks or workloads among peers. Peers are equally privileged, equipotent participants in the application. They are said to form a peer-to-peer network of nodes. Peers make a portion of their resources, such as processing power, disk storage or network bandwidth, directly available to other network participants, without the need for central coordination by servers or stable hosts. Peers are both suppliers and consumers of resources, in contrast to the traditional client–server model where only servers supply (send), and clients consume (receive).

significant example of cryptocurrency, long dreamed by cyberpunks: it's completely decentralized (Bitcoin software hardcodes a limited controlled expansion of the monetary base) with a public key cryptography but it remains in total anonymity. Even if Bitcoin blog said the anonymity is not a prominent design goal, it's true that this is a complicated issue because users are identified by a public-key only.

The Bitcoin currency system operates through a program, known as the Bitcoin Client, which facilitates transactions between two parties. All monetary transactions of Bitcoins are done directly between the two parties via the Bitcoin Client and over the Internet, a fact which allows for no transfer fees and the possibility of no bank-ordered chargebacks. The way the system was created allows for a fixed amount of Bitcoins to ever exist with nodes in the system creating a certain amount each year until the quota is filled. As such, the Bitcoin system will hit 21 million units in 2033 and then never grow, allowing the monetary supply to trend upward and downward in value naturally, without fear of government-sponsored currency re-valuation. This, of course, makes the currency inherently deflationary, a fact that has reignited the ever-continuing debate between Austrian and Keynesians.

Bitcoin enables payments that are based on proof, rather than trust, in a manner that is similar to cash. A seller given a cash payment can inspect the currency and, with a good degree of confidence, assert whether the payment is valid or invalid. Bitcoin also try to limit inflation by a novel solution which uses encryption and brute-force power in order to preserve the scarcity of the currency. To start off the network, Bitcoin uses a concept known as "mining" — people devote their resources to solving a very difficult cryptographic math problem, and those who succeed generate some Bitcoins. The difficulty of this problem is adjusted by the total production of Bitcoins, so that the network as a whole produces a relatively constant rate of coins.

Bitcoin is a mined digital currency build up in order to challenge centralized monetary authorities in US but also all over the world. Bitcoin was born with a clear universal goal. It's unsurprising that it has aroused great concern from the beginning of its life because of extralegal uses, in particular to pay for drugs in online marketplace. This digital money was hacked involving malware that disrupt usage since the mining process takes up a great deal of system resource. Cybercriminals have their eyes set on Bitcoin as well as hackers consider it as a dystopia. It's a fact that the Net is very fascinated by Bitcoin and storytelling in the Web is very intense. If we simply search "Bitcoin" in a search engine as Google in March 2012, we can find over 1,650,000 results and also it has discussed in many newspapers and financial magazine (in particular the Economist and the Financial Times). Bitcoin technology has demonstrate its vulnerability, it's barely illegal and opaque, but suggest many open questions about the possibility of the Net to support alternative forms of financial exchange.

## CONCLUSIONS

Money is generally defined in terms of the three functions or services that it provides. Money serves as a medium of exchange, as a store of value, and as a unit of account.

Web-based currencies challenge this traditional perspective and try to redefine money in order to reconsidered value based on what users themselves fix. This is a crucial aspect that reflects a financial value at individualization. Digital money value in that sense can be the result of a self centered network based on trust and reputation. Web money in some cases (micropayment systems for example) try to quantify "social bonding value" (Godbout, Caillé) using software that calculated a user's or a brand's reliability, consistency and responsiveness by measuring social presence and opinion across sites, blog and Social Media (Social Media ROI analysis). This

shows that this experiments often falling again in the dogma of rationalization calculability. On the contrary universalism ideology of hacker money as Bitcoin seems to realize a system very similar to finance: an oligarchy based on the desire of risks.

But in the same time, sharing platforms are accustoming us to collaborate and to trust each other, not only in online but also in offline worlds. This is why we are assisting to the rapid growth of the so-called "new sharing economy" not only in file sharing but also in other "material" sector including office space, travel accommodations, kids clothes, parking spaces, garden plots, luxury handbags, boats and more.

Function of storage is also bringing into question in online contest: web trust currencies could be referred only to present time and recalculated incessantly trough story telling, narration and social activity. We can reconstruct and monitored all the past, but we have no certainty about the future. We only know that we must constantly work and be preset to increase or hold high value of reputation.

Web money it is not now a unique and complete reality, but technologies and Internet users behavior appears on the course of this challenge. Economistic fallacy is so torn from the Net that try, often in plural but confused way, to find a lot of solutions, to organized different reaction against market universality. The Internet is today a mix of free and fee; it's a combination of new "culture of resilience" and a non-commodified realm persists that is as large as the commodified sphere and growing relative to it. Digital capitalism however tries to incorporated gift economies in the Web, according to what Polanyi called double-movement (1944). Digital capitalism try to use to his advantage fruits of collective labor, but the strength of the Web is based on its horizontality and plurality, in its capacity to create, to fail but recreate new experiments. If we consider the Human Economy approach by Keith Hart, Jean-Louis Laville and Antonio David Cattani (2010) we can see that all four principle seems to be satisfied: 1. It is made and remade by people; economics should be of practical daily use to us all. 2. It should address a variety of particular situations in all their institutional complexity. 3. It must be based on a more holistic conception of everyone's needs and interests. 4. It has to address humanity as a whole and the world society we are making.

Paradoxically we are looking for human economy in online contest.

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