# The Electronic Payment Paradigm – between trust and criminality

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**Abstract**: Technological evolution has always challenged individuals to rally their social rules and way of interaction to the new instruments that have been developed over time. This way, the projection of technology in one's daily existence represents the leitmotiv of our era and also, a certainty for the next ages. However, as the process *per se* is governed by a great dynamic, individuals face changes at a much higher pace, fact that exposes them to more and more vulnerabilities. This is as well the case of payment instruments, area in which individuals have evolved from very rudimental barter transaction to digital modern currencies. The concept of a two-edged sword represents the best analogy for introducing the idea that great innovative achievements might, besides great evolutionary effects, have the potential of being misused for antisocial purposes.

## 1. Structural and methodological stance

The paper analyzes from a legal perspective the way in which modern societies tend to replace conventional financial forms with new ones. It is designed as a case study on a very actual topic, namely modern, decentralized virtual currencies; in the same time, it is not referring to the centralized ones (i.e. issued on receipt of founds), which are already subject to regulatory frameworks in many jurisdictions and seen most often as money transmitters.[1] When exemplifying, I shall use the case of Bitcoin, which has been the world market leader and the most notorious alternative to fiat currencies.

[1] FinCEN, Guidance - Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies (2013) seen on FinCEN's webpage, p. 4 on 2014.09.01.

The structure shall fallow a logic of causality. It will first of all introduce the idea of decentralized virtual currencies (i.e. cryptocurrencies[2]) and continue with the actual regulatory *status quo*. Afterwards, it shall develop on the consequences deriving from the current, mostly European, state of affairs and will analyze possible remedies for the problems. Finally, the author will have his own concluding remarks. Considering semantics, it must be emphasized that decentralized virtual currencies are to be found in the paper as: virtual coins, digital coins, modern virtual currencies, digital currencies, cryptocurrencies or just simply, virtual currencies, all of them describing the same idea.

When it comes to the research, it is primarily based on empirical evidence (doctrine, media sources), mostly qualitative, as it considers the substance of the information and also analytical due to the fact of interpreting legislation, case-law with the aim of proposing a feasible solution. Furthermore, as the author analyzes an ongoing process, most of the used sources are very recent (i.e. from 2014).

Also, it must be said that the realistic-technological model of legal dogmatics is the main method used. This implies that the writer chooses a state of affairs as the most desirable and offers arguments sustaining that a certain legal policy is suitable to achieve this outcome.[3] However, the first part the work will be more descriptive as there is a clear need to present the 'starting point' - actual *status quo* - both, *de jure*, in a systematic way and *de facto,* as an aftermath of the current legal situation and the author's view will mostly be presented in the final section.

## 2. Introduction

The world as we know it today represents the sum of humans' evolutionary achievements; if we are looking at this century's peace and at the ongoing trends, it is for sure that the living paradigm of the generations to come will be based on more and more change. Moreover, as innovation will increase at an ever larger scale that what we are experiencing it today, it can be presumed that societies shall need to adapt their lifestyle to a more dynamic rhythm characterized by short and many transition periods between the new and the ultimate.

[2] Intermediary used in trade that relies on cryptography in order to secure the transactions and to control the issuance of new units.
[3] Álvaro Núñez Vaquero, 'Five Models of Legal Science', *Revus*, No. 19 (2013), p. 70.

Novelty is for sure present in more and more areas from our existence and one example is being represented by the way in which we used to understand trade and the different perspective we share nowadays. For example, in the ancient times people used non-monetary techniques, like barter, as goods were exchanged for other items of an equivalent value.[4] The attribution of trade value to an otherwise conventional object such as a coin or a trade bill grew as individuals and their trading partners developed a 'psychological aptitude to place trust in each other', trend that grew as individual understood the system's benefits (e.g. re-usage as an alternative to the idea of coincidences of wants).[5]

Going further, this way of mutual trust has evolved nowadays in more institutionalized and regulated shapes, namely currencies. Today there are 168 officially recognized currencies[6], which are being backed and regulated by national banks and domestic governments. Furthermore, as the financial markets have been subject to progress in the past years, there are also supranational institutions that have attributes in this resort.

*In concreto*, national banks configure and implement the monetary policy, issue coins and banknotes that are used as legal tender or 'oversee the smooth operation of the payment systems with a view to ensuring financial stability'[7], while domestic governments develop financial policies with the purpose of assuring economic stability and monetary strength. In the same time, there are external agents that might contribute to this financial logic; exemplifying, it is the case of the European Central Bank which manages the euro and gives authorization to central banks within the Eurozone to remit euro banknotes;[8] the coins and banknotes, no matter which currency they belong to, can afterwards take the form of e-money which basically represents the electronic storage of cash on a payment card.

On the other hand, the recent years came with an alternative to the legal tender regime as we used to know it. By giving primacy to an innovative pattern, private companies have constructed an electronic monetary system which comes to compete with the traditional one; so

[4] Jack Weatherford, 'The History of Money', (*Three Rivers Press*, New York 1997) p. 32.
[5] David Kinley, 'Money: A Study of the Theory of the Medium of Exchange', (*Macmillan*, London 1904) p. 48.
[6] *Currencies* seen on XE Currency Converter's webpage on 2014.08.08.
[7] *The National Bank's objective and role*, seen on Romanian National Bank's webpage on 2014.09.03.
[8] *European Central Bank* seen on European Union's webpage on 2014.09.02.

far, there are more than one hundred undertakings (Bitcoin, Litecoin, Namecoin etc.)[9] that provide this service; however, the system started growing in popularity ever since 2009 and tends to identify itself with the worldwide biggest market player which is Bitcoin.[10]

The most important difference between real currencies and virtual 'currencies' is that the last are not publicly administrated as the classical financial policies are replaced by a mathematical formula that is used to guarantee the system's functionality. However, even though virtual currencies are being generated in digital format they are not the same with e-money as they are created without being backed by conventional, fiat money.

*Lato sensu*, digital currencies can take several models: centralized, where all transactions take place through an intermediary and decentralized, 'where the network distributes transactions between nodes of a network', the case of Bitcoin and Litecoin.[11] However, as mentioned in the first section, of interest for this study is only de second category of digital coins.

Decentralized virtual currencies became more and more popular because of the advantages they bring. It is for sure that consumers will always seek cheap, fast and easy money transfers, all qualities developed by the digital currencies' networks. Being able to avoid both, the 'unfriendly' banking transfer fees and the limited schedule, all of this backed by the possibility of easy value carriage (e.g. memory stick, hard drive) increases for the new products.[12]

In the same time, the fact that users are anonymous represents a safety net for the ones involved in transactions; this is the situation in matters involving account freeze as the secrecy prevents individuals from having their account values seized by third parties.[13] The same thing can be said about identity theft, crime which has lately been the preoccupation of the European

[9] *List of all cryptocoins* seen on Bitcoin Talk's webpage on 2014.09.02.
[10] Simon Barber, Xavier Boyen, Elaine Shi, Ersin Uzun, 'Bitter to Better – How to Make Bitcoin a Better Currency', *Lecture Notes in Computer Science*, Vol. 7397, (2012) p. 399.
[11] Danton Bryans, 'Bitcoin and Money Laundering: Mining for an Effective Solution', *Indiana Law Journal*, Vol. 89, No. 441, (2014) p. 443.
[12] *Bitcoin: Decentralized, Peer-to-peer, Cryptocurrency* (2011) seen on Stanford University's webpage on 2014.09.03.
[13] Ibid.

Commission due to its growing character. In this second case, the absence of identification makes a possible theft lack object as no personal data is being shared while transacting.[14]

Besides the typology of consumers which use such payment networks for sole money transfer purposes, there is another category of individuals which understand the financial potential of the system and which invest in the digital currency *per se*. As the system becomes more and more popular and the cash flow increases, the exchange rate raises proportional with their financial benefit. For example, in 2013, the value of Bitcoin increased 8,000% fact which made investments from 2009 humongous profitable.[15]

If this is the most desired *status quo*, on the other hand, besides the great achievements for their daily existence, novelty might also expose the users to several vulnerabilities given, first of all, the relatively low level of consumer emancipation (i.e. literacy) in comparison to the innovation rate and, second of all, the possibility of misusage for criminal purposes. It shall however be seen in the later sections how the reverse of the medal takes place.

## 3. From classic to dynamic

As it has been previously mentioned, virtual currencies represent a medium of exchange accepted by the members of a particular online network. In more technical words, it represents a 'software-based online payment system that has its own currency' that, nowadays, compared with the incipient (centralized) forms of digital money, has no central depository and no single administration. The network software is designed for the creation of a specific number of coins which users get on the basis of 'solving some system number crunching tasks – procedure called mining'.[16]

Having this as a premise, transactions and the issuance of digital coins are carried out in a collective way by the network *per se*; afterwards, the coins can be sold or exchanged for fiat

[14] *Study for an Impact Assessment on a Proposal for a New Legal Framework on Identity Theft* (2012), seen on European Commission's webpage on 2014.09.03.
[15] *Price of Bitcoin Surges Past $1,000, up 8,000% in One Year* seen on Techvibes's (2013) webpage on 2014.09.03.
[16] *How does it work* seen on Bitcoin's webpage on 2014.08.10.

money or used to purchase goods and services from providers that accept them as payment instruments.[17]

Basically, the whole financial policies and regulatory measures imposed by a sovereignty or supranational entity are being replaced by a mathematical formula which is meant to assure the network's functionality (e.g. avoidance of inflation). Citing from the doctrine, 'rather than relying on confidence in a central authority, it depends instead on a distributed system of trust'[18] in which the state does not have any contribution or influence.

## 4. Controversial nature

The novel technological approach implemented in the creation and use of the new types of digital money generated several views when assessing on its legal nature.

Having regards to the European Union, which is the primarily area of interest for this study, it can be said that one of the most important positions came from 2013 and belonged to the German Finance Ministry which assumed that 'virtual currency is not e-money or foreign currency but is still a financial instrument.' Later on the same year Irish Revenue Commissioners considered that 'bitcoins have elements both of a commodity and a currency' while in early 2014 Swedish Tax Authority representatives had the view that Sweden is 'likely to view virtual currencies as an asset, like art or antiques, and not currency.'[19] On the other hand, Finland had a different approach than its neighbors and, through its Central Bank, stated that 'Bitcoin is not a currency or a payment instrument, but is more comparable to a commodity.[20]

In some countries where financial or political institutions were silent, it was for the judicial authority to impose its point of view. This is the case in the Netherlands where, a district court in a civil case ruled that digital coins 'like gold, are a medium of exchange that is an acceptable form of payment in the country but that cannot be defined as legal tender, common money, or electronic money.'[21] This definition is close to the one given by Finland or Ireland, as

[17] Ibid.
[18] *Bitcoin under pressure* (2013) seen on The Economist's webpage on 2014.09.03.
[19] Perkins Coie LLP (2014), 'Virtual Currencies: International Actions and Regulations', seen on Perkins Coie's webpage on 2014.08.14;
[20] Ibid.
[21] *Regulation of Bitcoin in Selected Jurisdictions* (2014) seen on The Library of Congress's webpage on 2014.09.08.

it fits the description of commodities, point of view that seems to be embraced by more European and worldwide states.

It is the case of the United States of America as well where, after a controversial Texas judgment in which bitcoins were seen as 'a currency or form of money' due to the fact that they 'could be exchanged for conventional currencies and used to purchase goods and services'[22], in May 2014, the US Internal Revenue Service clarified the situation and decided that virtual money 'will be seen as property and treated similar to any other valuable commodity.'[23]

Summing up, it can be seen that consensus has been reached when differentiating virtual currencies from real money; also, the lack of coherence when it comes to the actual nature seems to disappear as, in the Organization for Economic Co-operation and Development's view, more states perceive this new financial instrument as commodity.[24]

Anyhow, from a broader perspective, things are far from being settled in this matter and this also happens because there is still a lack of harmonization at the European Union level. As it will be seen in the next section, few legal loopholes are enough to permit virtual currencies escape the regulatory framework.

## 5. (No) Regulatory framework

Within the European Union the main piece of legislation dealing with the digital equivalent of cash is the 'E-money Directive'[25], which has been enacted in 2009, time when the nowadays big virtual currency networks were just initiating their activity. Even though, as mentioned before, virtual currencies undertakings are not considered to be electronic money institutions, the European Commission, when sending its proposal, codified in the recital that 'the definition of e-money should cover […] not only all the electronic money products available today […] but also those products which could be developed in the future.' Having this as a starting point it can be seen that it was aiming for a broad, *lato sensu* definition which would also

[22] *'Bitcoin is a currency': Federal judge says the virtual cash is real money* (2013) seen on: NBC's webpage on 2014.08.16.
[23] *IRS Rules Bitcoin Is Property, Not Currency* (2014) seen on Techcrunch's webpage on 2014.09.08.
[24] Adrian Blundell-Wignall, 'The Bitcoin Question Currency Versus Trust-Less Transfer Technology', *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 37 (2014) p. 12.
[25] Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions, OJ L 267/7.

include other possible financial instruments that were to be developed in the future years. This safety net would have been a good compromise meant to avoid future regulatory gaps fostered by the difference in pace between the very fast innovation cycles and the quite lengthy and bureaucratic legislative bargains.

However, even though the Commission embraced a visionary way of making legal policy, in the European Union jurisdiction the recital is perceived as soft-law, non-legally binding, which most of the time has interpretative value upon the actual hard law provisions, which are the main articles.[26]

In our case, the Commission's primarily will was diluted even beyond the possibility of having it as an interpretative tool due to the fact that, after the procedure in front of the Parliament and EU Council, article two came with a very clear and exhaustive definition, fact which leaves no place for ambiguity or interpretations. Citing, 'electronic money means electronically, including magnetically, stored monetary value […] which is issued on receipt of funds for the purpose of making payment transactions […] and which is accepted by a person other than the electronic money issuer.' As it can be seen, there are three cumulative – *sine qua non* – conditions that need to be fulfilled in order for a payment instrument to fall within the scope of the Directive.

Because of this regulating strategy, bitcoins and other modern virtual currencies evade the legal provision as, for example, they are generated automatically within the network and not issued on receipt of funds. To this extent, the second condition is not fulfilled and, in consequence, the whole act becomes inapplicable.[27]

This way of reasoning and conclusion are being embraced both, in the United States and European Union. For example, in 2012, the European Central Bank, in one of its reports has stated that virtual 'currency is a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual

[26] Michael Koeding, 'Active Transposition of EU Legislation', *EIPASCOPE*, No. 3 (2007) p. 29.
[27] Niels Vandezande, 'Between Bitcoins and mobile payments: will the European Commission's new proposal provide more legal certainty?', *International Journal of Law and Information Technology*, Vol. 1, No. 16, (2014) p. 6.

community'[28] while the United States Financial Crimes Enforcement Network (FinCEN), has released an official point of view in which it confirms that bitcoins and other decentralized digital currencies are not regulated.[29]

Within the European Union, the fact that modern virtual currencies evade the e-money Directive's scope has a lot more implications than this pure fact of not having to be in line with 'the prudential regime for electronic money institutions' (e.g. establishing, functioning).[30] As there is a set of interlinked secondary legislation acts (i.e. Directives, Regulations) that use the definitions from the 2009 Directive, this makes modern virtual currencies avoid the application of a broader regulatory framework.

A first example is represented by the Payment Service Directive,[31] law stating which category of organizations can administer payment services. Due to the fact that in article 1 (b) it refers to the previously mentioned e-money definition, bitcoins and other cryptocurrencies are not covered by this piece of legislation either. As a result, the business conduct standards imposed by the European legislator do not apply; for example, rules on how to allow and execute transactions, parties' rights and obligations, transparency of data, liability in case of illegal use, refunds or the revocation of payment orders[32] are non-binding for this area of activity.

In the same time, consumers can not prevail upon their standard European Union rights as the main piece of legislation addressing such matters, namely the 'Consumer Protection' Directive[33] provides that any type of financial service is excluded from its scope.[34] This happens due to the fact that provisions related to their rights are found in the *lex specialis* (e.g. Payment Service Directive) that governs this particular type of legal relationship but which, as mentioned before, is not applicable in the case of modern virtual currencies.

[28] European Central Bank (2012), *Virtual Currency Schemes* (European Central Bank, Frankfurt am Main) p. 13.
[29] Niels Vandezande, op. cit., p. 7.
[30] *E-money* seen on European Commission's webpage on 2014.09.05.
[31] Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal, OJ L 319/2
[32] Directive 2007/64/EC art. 28-78.
[33] Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, OJ L 304/64
[34] Ibid, art. 3.

Moving from consumer's private interest to the public one, the rather narrow definition of financial institutions which is codified in the 'Anti Money Laundering' Directive[35] and the fact that Regulation on information on the payer accompanying transfer of funds[36] makes reference to transfers made only 'through payment service providers'[37] allows modern, decentralized virtual currencies to escape the application of several financial surveillance measures meant to protect against money laundering and terrorist financing.

As it can be seen, the way modern digital currencies networks function permits them to take benefit of the several loopholes that the actual legislation has and function in a shadier, clandestine environment where authorities are not present.

Because of this, a whole set of vulnerabilities and problems occur; for consumers, they can severely lose their investments, amounts can be stolen from their 'virtual wallets', the EU refund rights are not protected and, deriving from the digital money's nature, there is also uncertain tax liability. In the same time, there are big concerns for the general public as well due to the fact that such instruments can be used for criminal activity.[38]

## 6. Dealing with the problems

### 6.1 Value loss

One of the first problems that might occur regards the high volatility of the digital coins. As they are generated by private financial systems that have as main idea the distributed system of trust between the network participants, this is problematic due to the fact that the network is based on simple logic of supply and demand.[39]

Having this as a premise, such schemes can be facile targets for all kind of manipulation strategies. For example, promoting the threat of possible deflation, bad press campaigns can influence users to withdraw their money out of the system, fact which would lower the demand

[35] Directive 2005/60/EC of the European Parliament and of the Council of 26 October 2005 on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing, OJ L 309/15.
[36] Regulation (EC) No 1781/2006 of the European Parliament and of the Council of 15 November 2006 on information on the payer accompanying transfers of funds OJ L 345/1
[37] Ibid, art. 2.
[38] European Central Bank, (2012), p. 47.
[39] Reuben Grinberg,' Bitcoin: An Innovative Alternative Digital Currency', *Hastings Science & Technology Law Journal*, No. 158 (2012), p. 177.

and, as a consequence decrease the virtual currency's unit price to an unexpected low level.[40] Linking this kind of strategy to severe previous fluctuations (e.g. in 2013 the exchange rate of a Bitcoin to United States dollars fell about 60 % in a single day and this year, the value dropped by as much as 80 % in 24 hours[41]) can for sure damage the network's strength and reputation.

Continuing the analysis, during this year the Bitcoin exchange rates in relation to the major currencies varied ten times more than the average fact that made several European Union National banks warn that 'because they are not issued or guaranteed by a central authority there is a possibility of value loss due to their high volatility'.[42]

Drawing a conclusion, virtual currency networks might be the victims of their own faulty functioning and bad reputation. On the other hand, besides the poor economic logic backing up the creation and transfer of digital units, the system can also be endangered by different users whom have enough capital to try and manipulate the market by artificially (e.g. using deceptive transactions) increasing or decreasing the unit value; the networks might be good places for Ponzi schemes or other newer fraudulent strategies due to the fact that the attraction for fast gain among users is very high[43] especially for the ones whom speculate the exchange rates.

### 6.2 Refund issues

As mentioned before, when it comes to consumer protection, virtual currencies evade the scope of both: *lex generalis* (i.e. the Directive on Consumer Rights) and *lex specialis* (i.e. the Payment Service Directive).

With regard to this fact, the refund rights provided by the second directive are not enforceable in suits involving modern virtual currencies. In consequence, such network companies are not offering the type of assistance the individuals are expecting from a bank or other financial institution. As payers and payees are anonymous and no account details needs to be provided (e.g. names, address, phone number, country), zero interference with their

[40] Benjamin Wallace, 'The Rise and Fall of Bitcoin', *Wired Magazine*, (November 2011) p. 7.
[41] Coindesk, *Bitcoin price index chart 2013-2014*, (2014) seen on Coindesk's webpage on 2014.08.18
[42] *Regulation of Bitcoin in Selected Jurisdictions* (2014) seen on 2014.09.01.
[43] Sandra S. Benson, 'Recognizing the Red Flags of a Ponzi Scheme', *The CPA Journal* , Vol. 79, No. 6, (2009) p. 18

transactions takes place. In consequence, digital money undertakings (e.g. Bitocins, Litecoins) deny any liability for consumer losses if funds are lost by negligent transfer or stolen.[44]

Summing up, the refund rights are not being protected due to the fact that, first of all, the technicalities on which the network functions are as such that it is hard for the administrators to check the scope and legitimacy of a payment. On the other hand, the fact that the legislative burden does not apply to the modern virtual currency systems, makes such companies neglect consumer protection standards.

### 6.3 Theft

Not having a proper refund policy in the matter of unpermitted transfer of funds from users' accounts is a big incentive for thieves. This way, once the money is transferred from the initial place to another anonymous account, there is no way back except a voluntary return. However, users of digital money, who lose their deposits while administrated of third-party exchanges, have the option to demand refund and damages from the exchanges.[45]

It has been claimed that 'security is difficult and expensive, and virtual currency startups generally do not have the revenue and profits sufficient to attract the capital that would allow top-notch security to be implemented'.[46] Having this as a premise, ever since 2010, there have been stolen bitcoins worth of approximately €380 million, amount which represents about 7% of the total number of this particular type of coins that were generated so far.[47] However, the number refers only to coins released by one market player, which is just one company; in the same time, there might be other fraudulent transactions not uncovered to this extent which can raise the total amount.

Within the information technology community it is generally recognized that crypto systems are strong enough that the only way to penetrate them is by trying every possible key

[44] Frank Tudor, 'Making Money with Bitcoins, Litecoins and Other', (*Smashwords Inc*., Los Gatos CA 2014), p. 12.
[45] Ajibola Ogunbadewa, 'The Virtues and Risks Inherent in the 'Bitcoin' Virtual Currency', (2014) p. 19 seen on SSRN's webpage on 2014.09.08.
[46] *How is all this bitcoin theft happening* (2013) seen on Bitcoin Stock exchange's webpage on 2014.09.10.
[47] *$500 Million Worth Of Bitcoin Has Been Stolen Since 2010* (2014) seen on Businessinsider's webpage on 2014.08.19

(i.e. algorithms of symbols that can amount to millions of combinations).[48] However, looking at the particular causes that allow such big frauds to happen, it can be said that undiligent users are always a target. For example, the fact that most of the accounts are not secured by alternative authentication (i.e. hardware token or one-time-password generator as SMS) or do not even have a basic password (i.e. the majority of the virtual wallets being just an internet address that once discovered and accessed gives permission to make transactions) represents a serious vulnerability.[49]

In the same time, not only regular user can be negligent when handling such information; poor data protection by currency exchange database administrators represents one of the biggest concerns in this resort. Having a database of hundreds or even thousands of accounts that can be accessed by breaking a security system which most of the times is not proportionate to the financial value it should protect is by far the most desirable target for outlaws.[50]

In the same time, one last problem with which the whole digital currency community has to deal is represented by specially designed malware programs (e.g. received in the mail inbox or when accessing a webpage) that have the aptitude to steel information or foster double spending operations, all in the detriment of the network members.[51]

### 6.4 Taxes

When it comes to trading and financial instruments, legal certainty, in general, and foreseeability, in particular, are very important principles due to the fact that costs need to be anticipated in an easy and transparent way.

However, this is not always the case for modern digital currencies; as they still have a controversial nature (e.g. being categorized as commodities, stocks or assets by different

[48] Bert-Jaap Koops, 'The Crypto Controversy – A Key Conflict in the Information Society', (Kluwer Law International, Hague 2001) p. 42.
[49] Christopher Mann and Daniel Loebenberger, Realizing Two-Factor Authentication For The Bitcoin Protocol (2014) pp. 1-2 seen on Cryptology ePrint Archive's webpage on 2014.09.10..
[50] Tyler Moore, Nicolas Christin, 'Beware the Middleman: Empirical Analysis of Bitcoin-Exchange Risk', *Financial Cryptography and Data Security Lecture Notes in Computer Science* Vol. 7859 (2013) pp. 25-26.
[51] *Cashing in on Cybercrime: New Malware Target Bitcoin* (2012) seen on Trendmicro's webpage on 2014.09.10.

jurisdictions), the taxation regime differ depending on the applicable legislation (e.g. users will either pay payroll, property, income, capital gains or profit taxes).[52]

Having regard that the tendency is towards treating virtual currencies as commodities for tax purposes, it must be said that they shall have the same legal regime as gold, oil, wheat, coffee and other fungible goods. More exactly, commodities are a category of goods for which there is demand and which qualities are uniform among producers; exemplifying, a tone of grain is mostly the same product as it does not really matter who produces it.[53]

Taking the case of Finland, country in which modern digital currencies are treated as commodities, buying a €2 ice-cream in 2014 with bitcoins purchased for €1 in 2013 would generate €1 in capital gains for the ice-cream consumer (i.e. pay capital gains tax) and €2 of gross income for the supermarket (i.e. pay profit tax).[54] Furthermore, most of the states require that digital coins 'miners' will have to notify their gains as taxable income with a value equal to the worth on the moment the coins were received from the system.[55]

However, the lack of harmonization in fiscal matters is not the only issue. Like cash transfers, virtual currencies are hardly traced by tax authorities due to the fact that the users are anonymous. Even though the transaction reports are public, this does not help because no identification is attached to the parties involved in the transfers.[56] As it shall be seen in the future section, besides hindering the refund process and fostering theft, tax evasion or market manipulation, anonymity is also a good incentive for hard core criminality (e.g. money laundering, terrorist financing, illegal purchases).[57]

### 6.5 Public interest

It has been said by a financial strategic analyst that 'the biggest barrier in the fight against crime is the data' and that 'there are literally trillions of transactions going through the

[52] *Bitcoin Taxes* seen on Bitcointaxes's webpage on 2014.09.11.
[53] *Commodity* on Inverstorsworld's webpage seen on 2014.09.11.
[54] *Virtual Currency Taxation* seen on the Finnish Tax Authority's webpage on 2014.08.20
[55] McLeod, Patrick, 'Taxing and Regulating Bitcoin: The Government's Game of Catch Up', *Journal of Communications Law and Technology Policy* Vol. 22, No. 2 (2014) p. 390
[56] Adrian Blundell-Wignall, op. cit., p. 13.
[57] Raj Samani, François Paget, Matthew Hart (2013), McAffe White Paper – 'Digital Laundry - An analysis of online currencies and their use in cybercrime', (*McAffe Inc*., Santa Clara, CA) pp. 14-16.

world's financial systems.'[58] Adding anonymity to the already challenging situations, the outcome reached is one in which authorities are in the impossibility of handling the situation.

Looking at the numbers, there have been about 12 million transactions over 6 years which involved €5 billion for child pornographers, drug dealers, identity thieves, hackers and other outlaws, all encouraged by the rapid and anonymous exchange of virtual coins; in the same time, because of this, several individuals are dealing with possible life imprisonment charges.[59]

Having regard to this fact, in July 2014 the Russian Government considered banning digital coins; moreover 'entities that use or exchanges in virtual currencies are subject to suspicion of money laundering or other criminal activities.'[60] However, this official position might change in time due to the fact that the usage of digital money might be a good alternative in order to compensate for the financial sanctions[61] imposed by Visa and MasterCard as a result of the Ukrainian crisis.

Turning back to the actual crimes which use anonymity, a United States government official assumed that if Al Capone was alive today he would use these networks to hide his money.[62] The fact that payments are clandestine protects against any control (i.e. to detect, ask justifications and freeze assets) from public authorities over the users' accounts and this is a good way for corrupt politicians or other criminals to hide their illicit income.

In the same time, without the possibility to tie an identifiable user to a particular virtual currency address, tracking the injection, layering, and reentry of laundered money would be really hard public officials. As a consequence, anti-money laundering authorities are dealing with a 'target' that is almost impossible to recognize.[63] Furthermore, anonymity doubled by the 'currency's' high volatility can help justify huge incomes and disguise the origins of money obtained through illegal activities, know-how which is also used to launder money.

[58] Cindy Williamson, Jason Vazquez, Jason Thomas, Katherine Sagona-Stophel (2013), Thomson Reuters Accelus Report – ' Technology in the Fight Against Money Launderingin the New Digital Currency Age' seen on Thomson Reuters's webpage p. 11, on 2014.08.21.
[59] Ibid, p.4.
[60] Perkins Coie LLP (2014), op. cit.
[61] Juan C. Zarate (2013), 'Conflict by Other Means - The Coming Financial Wars', *Parameters*, Vol. 43, No. 4, (2013) pp. 90-92.
[62] *Online Currency Exchange Accused of Laundering $6 Billion* (2013) seen on The New York Times webpage on 2014.09.12.
[63] Danton Bryans, op. cit. p.447

Moving forward with the analysis, the lack of information on the payer and the payee allows large amounts of money to be moved cross border without hindrance to undetected areas, method which is perfect for terrorist financing.[64] In the same time, this transaction typology provides a secure service for black market commerce (e.g. narcotics) by assuring a safe way of payment between retailers and costumers from different parts of the world.[65] In both cases, the virtual currency can be transformed in fiat money by either using centralized digital currency exchanges, selling them to individual users, withdrawing from digital money ATMs or used to purchase goods and services.

As it can be deduced, besides the many benefits that virtual currencies bring into the consumer's life, there are also several issues regarding to the fact that so far, the modern, decentralized ones have evaded the European Union or worldwide regulatory frameworks. The next section is intended to present the recent reactions and legal developments in this resort, which came as a response to all the above mentioned problems.

## 7. The next steps

On the European Union scale, the most important point of view, besides the ones presented by the European Central Bank ever since 2012 is being assumed by Michel Barnier whom, very recently, from his posture of financial services commissioner communicated that 'it is imperative to move quickly on this issue [...] the potential for money laundering and terrorist financing is too serious to ignore.'[66]

However, at a first sight, the European Union finds itself only at a political declaration level due to the fact that none of the ongoing negotiations for recasting the current relevant directives (i.e. payment service directive, the anti-money laundering/terrorist financing directive and the one on information accompanying transfer of funds)[67] are not having on their agenda the virtual currency issue. Anyhow, it should be expected that initiatives regarding this area of

[64] KPMG, Virtually Unregulated, *Countering Virtual Currency Money Laundering in the 21st Century* (2013) pp. 3-4, seen on KPMG's webpage on 2014.08.21
[65] Raj Samani, François Paget, Matthew Hart, op. cit., pp. 14-16.
[66] *EU Banks Must Shut Bitcoin Until Rules in Place, EBA Says* (2014), seen on Bloomberg's webpage on 2014.08.22.
[67] Directive 2007/64EC, Directive2005/60EC and Regulation 1781/2006.

interest will soon be presented. They might just take the form of new pieces of secondary legislation (i.e. Regulation, Directive) or come as amendments to the currently negotiated acts.

On the other hand, considering what is happening in the United States it can be said that things are dynamic both, federate and not federal level. Some of the first authorities to take initiative and try to regulate decentralized virtual currencies were the ones from the state of New York. In this matter, at the end of July current year, the New York Department of Financial Services proposed a licensing scheme that would also cover the new models of virtual coins. By defining virtual money as 'any type of digital unit that is used as a medium of exchange or a form of digitally stored value that is incorporated into payment system technology', its intention is to create a new regulatory framework. As it can be seen, the term is constructed in an extensive way and as it is meant to encompass both centralized and decentralized repositories and administrators.[68]

Furthermore, the proposed regulations goes beyond the money transmitter rules and it *expresis verbis* impose the duty of designation of a compliance officer and a chief information security officer.[69]

From the other measures imposed it can be said that virtual currency businesses (e.g. virtual currency exchanges, administrators) will have to 'maintain capital amounts set by the law and have audited annual financial statements, enforce written policies, including refund, anti-fraud, anti-money laundering, cyber security, privacy and information security.'[70]

In the same time, such undertakings will be obliged to keep for ten years books and records regarding all transactions and give public officials 'immediate access to all records of licensee or affiliates', 'wherever located.' Also, the anonymity problem is being dealt with as virtual currency firms will have to make sure that each transaction is being followed by

[68] *New York State forges ahead in the virtual currency arena with proposed licensing requirements* (2014) seen on Regulation Tomorrow webpage seen on 2014.09.15.
[69] Ibid.
[70] Proposed Codes, Rules and Regulations, NY State, Dept. of Financial Services seen on New York Department of Financial Services's webpage on 2014.08.22

information on amount date and 'precise time', 'payment instructions', 'names, account numbers, and physical addresses of the parties to the transaction.'[71]

This kind of legal policy looks very energetic and, *prima facie*, solves all the above mentioned problems. Even though bringing more discipline and transparency into the system is very desirable, the cost at which this might occur can endanger the existence of the system *per se*, fact that might cause other problems (i.e. innovation hindrance, consumer welfare injury, financial inclusion).

On the European level, legislative action will for sure take place on the short run. As the anti-money laundering and terrorist financing policies are internationally harmonized[72], it is more than legitimate to expect measures increasing transactional transparency. Also, as the Union institutions have a very cautious approach on consumer protection, there will be measures taken to assure refund policies, enhanced security and legal certainty.

On the other hand, it should be expected that the virtual coins companies will invest in protecting their actual interest; some of their tactics might refer to lobbying in Brussels for not as restrictive legislation and investing in media campaigns that would assure their users of the network's strength. However, such kind of actions must be seen legitimate as far as virtual currency undertakings admit the system's vulnerabilities and plead for suitable measures that would not go beyond what is needed to efficiently regulate the system. As the danger of excessive regulation exists, the need for compromise represents a must.

## 8. Conclusion

It is certain that we live in a dynamic world based on technological change and permanent development. Because of this, legislators must keep pace with it and deliver the best regulatory frameworks meant to sustain progress and not hinder innovation. In order to do so, they must first understand the system's way of functioning, its desirability for the society and the way it can be protected from misusage. Once this level of understanding and planning is being reached, the premises for a solid regulation are being established.

[71] Ibid.
[72] *Countries* seen on Financial Action Task Force's webpage on 2014.09.15.

However, this is not always the case; as it has been developed in this case-study, legislators are sometimes one step behind as the understanding process takes time and normative bargains are lengthy. Moreover, the need to change legislation can occur most of the times due to the fact that it lacks visionary character and, as in our case, it allows new technologies to evade their application.

Besides the timing issue, there is another problem which relates to the substance of the norm to be enforced. In this particular resort a proportionality test between the benefits of the invention and the costs of regulating it must always take place in order to reach the perfect compromise. Exemplifying, what makes the whole decentralized virtual currency really cheap nowadays is the fact that the functioning costs are at a minimum level. Once all of the regulatory requirements from the United States example will be enforced (e.g. book keeping, maximum transparency, surveillance, accountability etc.) the administrative and financial burden might be too heavy for the system and prices for services might rise at the detriment of the average consumer, fact which will 'chase away' users.

In the same time, as there are two categories of users: the ones being attracted by the anonymous or facile way of sending money and another one speculating exchange rates, it is for sure that once most jurisdictions will impose maximum transparency standards, the networks will not be desirable any more for most of the persons from the first category and as a result the second one will suffer as well. As the currency power or fragility is a matter of supply and demand it is certain that if the supply increases and there is not demand, the unit price will lower.

Having this interlinked system, it can be seen that an action that is being taken on any level has implications upon several other aspects and agents. Because of this, it is very important to give primacy to a proportionality type of logic in which only feasible measure that do not go beyond what is needed are being enforced and in which the effects of the regulatory endeavor are not depriving the final consumer from novel and more efficient products.

However, as in order to solve refund, security and criminality problems there is a strong need to bring more transparency, the fact that some users might abandon the network (i.e. the ones aiming for anonymous transfer) represents a loss that, on the long run can prove to be beneficial for the system's legitimacy and reputation. Continuing, it can be said that, at this

point, the perfect compromise would be transparency at very few costs as the system would still conserve its benefits for consumers and, in the same time, fraudulent and penal abuses would be avoided.

For example, one solution to reach such an outcome can be the usage of the e-identification method. By basing their logic on the fact that 'building trust in the online environment is key to economic and social development' the European Union institutions have adopted in July 2014 the Regulation on electronic identification and trust services for electronic transactions in the internal market.[73] This piece of secondary legislation defines electronic identification as 'the process of using person identification data in electronic form uniquely representing either a natural or legal person'[74] and has the main scope of assuring a 'coherent framework with a view to providing a high level of security and legal certainty of trust services' at affordable prices.[75] Anyhow, this might be just one solution in order to reach the perfect balance between the need to abolish anonymity regarding virtual currency businesses and the imperative of keeping costs as low as possible.

Summing up, as today virtual currencies are more and more popular among consumers - important currency exchanges list virtual coins alongside other currencies, Visa and MasterCard offer virtual currency debit cards and Lamborghini accepts virtual coins for its cars[76]- it is very important to make sure that the regulations fold on the market tendencies and do not obstruct them in a brutal way.

[73]Regulation No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC OJ L 257
[74] Regulation No 910/2014 , art. 3 (1).
[75] Regulation No 910/2014 , recital 44.
[76] *So You Know Nothing About Bitcoins? Here's 50 Things That'll Make You Sound Like An Expert* (2014) seen on Bluntbit's webpage on 2014.08.10

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