



Taking into account the constantly evolving growth of online activities, including e-commerce and other types of online transaction, the European Commission has decided to strengthen the competitiveness of the European Union (EU) in the new digital economy. Indeed, the European Commission has acknowledged the importance of internet and other remote communication means as well as their effects on trade, exchanges and information whether at the national or cross-border level.

The digital economy is already well-established in many European countries and even more so in countries such as the USA, Japan and Australia as well as in the eastern European “emerging” countries. However, it appears the EU lags behind in certain areas, either due to outdated regulations or the lack of initiatives covering technological innovations in certain areas. For example, developments in the Biometrics’ sector offering the use of biometric techniques, such as voice recognition, fingerprint recognition or even eye-recognition, are not used as much in Europe as in some other

improve trust in online transactions (by considerably limiting the risks of fraud, identity theft and the money-laundering often linked to digital transactions).

In this context, another major trend is the use of cryptocurrency. Cryptocurrency can be defined as a virtual currency (VC) i.e. a digital representation of value that is neither issued by a central bank or public authority nor necessarily attached to a fiat currency, but is accepted by natural or legal persons as a means of exchange and can be transferred, stored or traded electronically and which are created online using powerful computer hardware, which allows users to “mine” small amounts of the currency by solving deliberately complex algorithms.

Cryptocurrency is a form of digital currency or VC with the differentiating characteristic that it has been created and then put on the market based on people solving complex computing algorithms or mathematical dilemmas with their own computing system. This aspect distinguishes cryptocurrencies from traditional, “fiat” currencies, those issued by central authorities, such as central banks, in which the approximate amount is monitored and regulated by a central institution. A VC can take one of several forms: a “closed” VC can only be used in or in relation to its creator’s scheme (e.g. the currency used in video games such as World of Warcraft Gold); a VC with unidirectional flow can be obtained by exchanging “fiat” currency and cannot be exchanged back to the original VC (such as Facebook’s Credits); or a VC with bidirectional flow can be obtained by exchanging into and exchanging back from the original VC. Yet none of these VC types holds the “crypto” aspect required to qualify as a cryptocurrency.

Today Bitcoin is the VC that most often comes to mind when the word “cryptocurrency” is used. Indeed, Bitcoin is the most well-known cryptocurrency on the market. Nevertheless, since Bitcoin’s launch in 2009, lots of new types of cryptocurrency have emerged. These new currencies are usually named “Alternate Cryptocurrencies” (or “Altcoins”). All Altcoins provide an alternative to Bitcoins and have their own specificities. At the moment the most popular include Litecoin, Goldcoin, Darkcoin. Their use is constantly evolving; people are now able to buy crypto-coins or at least part of them (the value of these currencies fluctuates based on factors such as the number of coins created or “mined” and the scale of their use) as they can now be either purchased online or traded in exchange markets equivalent to the stock market with “fiat” currencies and they can be used as an investment (in anticipation of their value increasing), to buy products online or to participate in various online activities.

# The rise of cryptocurrencies and their use in the gambling sector: Is the current EU legal framework suitable for innovation?

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parts of the world, such as Australia and parts of Asia.

The EU takes a cautious approach. For example, following the Biometrics’ sector, it is not yet prepared to overcome the sensitive issues the technological development raises. Yet at the same time it is aware that an adaptation of the current banking, anti-money laundering legislation, data protection, payment and other security regulations could enhance significantly the protection of EU residents and facilitate and

In recent years, those gambling websites accepting crypto-coins have started to flourish. According to the gambling operators in favour of using cryptocurrency in their gambling website operations, this new type of money reduces their costs significantly (as no third-party payment processor intervention is required, nor conversion fee, nor bank intervention), increases transaction speed and enhances security as all transactions are monitored by the VC's 'miners' and protected by fully-secured encryption. Initially this payment medium appears to be better and raises the prospect that in the future VCs will replace "fiat" currencies in the digital world. Yet, of course, VCs do contain their own set of risks, such as value volatility, systems failure, hacking and no institutional controls. While cryptocurrencies' usage may appear to be a prominent future payment method in the online transaction field generally and in online gambling more specifically, the current and prospective EU regulatory framework does not appear to be suitable for such an innovation.

Indeed recently, the EU institutions agreed on the final text of the Fourth Anti-Money Laundering Directive that now subjects all gambling operators to due diligence procedures when their customers perform certain transactions above a certain Euro amount. Due diligence procedures apply to online gambling operators and require, among other things, reporting obligations and fully-fledged identity controls. This Directive is not appropriate for gambling websites that only accept cryptocurrencies. For example, it would be difficult to trace transactions between an online gambling operator and a player holding a cryptocurrency wallet. A traditional bank account permits the confirmation of the identity of either the account's owner or the different received funds. By contrast, a cryptocurrency wallet would be linked to a player's account and so it would not be possible to find out who the effective owner of the account is nor would it be possible to trace any payment to or from this e-wallet, as the setting up of an e-wallet would not require any personal information disclosure, nor would it be controlled or supervised by any authority but by the "miners" themselves. In addition all transactions carried out using cryptocurrencies are usually registered within the cryptocurrencies' respective network (typically some type of devolved registry), they only appear in the form of a computing address without any reference to the personal data of the address's holder. Furthermore, different (start-up) companies active in the field have already launched new mechanisms such as ATMs with possible biometric identification systems; tools to allow payment with cryptocurrencies on land-based gambling machines, etc. In view of the difficulties and inadequacy that the current EU regulatory framework faces in addressing the existing aspects inherent in this sector, it is most likely that even the future regulations currently under discussion



within the EU institutions will be outdated by the time of their first implementation.

Another example of the inadequacy of the current EU legislative framework is EU Directive 2009/110 concerning the take-up, pursuit and prudential supervision of the business of electronic money. Cryptocurrencies do not fall under this Directive's definition of e-money (and so are not subject to its rules), nor do they fall under the EU regulations protecting investors in investment schemes. Moreover, there is significant uncertainty as to how to classify the different actors of a cryptocurrency scheme e.g. "miners" will not be regulated by the future and new EU Payment Service Directive as they do not fall within the definition of payment service providers or payment institutions it sets out. Given the current legislative framework does not allow granting a proper classification to all cryptocurrency scheme participants, how should people exchanging crypto-coins or converting "fiat" currencies to cryptocurrencies be classified? This issue arises mainly due to the fact existing and prospective legislation is based on the old conception of money, involving the presence of central, public institutions that monitor and regulate the currency flow.

In a much wider context, it should be noted that the arena of cryptocurrencies is just one of many challenges the EU institutions currently face in developing appropriate regulations for innovations in the digital economy. Regulatory effort is needed in other areas of innovation. One example is "Big Data," the large, high-velocity amounts of information produced from ever-larger and varied sources that go beyond traditional data collection tools designed to, often manually, handle mainly small-scale, low-variety and static datasets most of the time. The European Commission has stated that datasets are: so large and complex that it becomes difficult to process such "big data" with the current data management tools and methods while at the same time this new trend holds enormous potential in various fields, ranging from health, food, security, climate ... Another example is The "Internet of Things" or "IoT" (referred to as a dynamic global network infrastructure where physical and virtual things of all types communicate and are seamlessly integrated e.g. mobile phones or other devices connected via means such as the internet or Bluetooth). Again the European Commission has expressed the need and its ambition to fund projects to tackle emerging questions of availability, quality and interoperability related to data gathered through smart connected objects and other IoT technology.

In conclusion, the EU needs to anticipate and approve suitable legislation to "catch-up" with innovations to give the EU Digital Internal Market its full efficiency and attractiveness for investment. However, to date, the path to a legal framework inciting innovation remains far away. ■

1 European Banking Authority Opinion on "virtual currency" of 4 July 2014, p. 7 <http://www.eba.europa.eu/documents/10180/657547/EBA-Op-2014-08+Opinion+on+Virtual+Currencies.pdf>

2 European Central Bank "Virtual Currency Schemes" October 2012 <http://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>

3 [www.altcoins.com](http://www.altcoins.com).

4 2013/0264 (COD).

5 Communication from the Commission of 2 July 2014 "Towards a thriving data-driven economy" <https://ec.europa.eu/digital-agenda/en/news/communication-data-driven-economy>