Type: Research Article

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Digital Financial Strategy: New Direction or the Usual Old?

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ABSTRACT

The development of digital currency through cryptocurrencies left a legal lacuna. This study delves into the relationship between technology and law, namely the legal regulation of technology. In doing so, the author dealing with IoT devices, the blockchain and the challenges caused by cybercrime. The research focus on digital financial strategy, which forms the blockchain-related. This research applying descriptive and comparative method by introducing the technology behind cryptocurrencies and followed by examining the problems with respect to Digital Financial Package of the European Union. The research shows that the digital finance strategy is the most significant comprehensive legislative packages of recent years.

Keywords: *Blockchain, Cryptocurrency, Digital Finance Strategy*

INTRODUCTION

Digital money, electronic currency, cryptocurrency[1] we have all heard these terms before. Recently, you can hear more and more about them in the news or read on the Internet. But what are they? Many people confuse it, although cryptocurrencies are a type of digital currency. Their working mechanism is similar, but still different on some level. Regarding the regulation of artificial intelligence, it may be worth drawing a conclusion to what extent it can be considered modern-day slavery.[2]

The research focus on digital financial strategy, which forms the blockchain-related. This research applying descriptive and comparative method by introducing the technology behind cryptocurrencies and followed by examining the problems with respect to Digital Financial Package of the European Union. The research shows that the digital finance strategy is the most significant comprehensive legislative packages of recent years

First, let's look at the technology behind cryptocurrencies, blockchain and distributed ledger systems. The blockchain on which Bitcoin is based is the so-called one possible form of implementation of distributed ledger systems. [3]A distributed ledger system is a network in which data is shared among network members in a synchronized manner. In order for the system to function, it is necessary to establish and maintain a connection between all members of the network, and also to create a consensus-based algorithm, on the basis of which network members participate in the activities conducted through the network. The distributed ledger system can be either private or public, so it is not excluded that, for

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[1]András Györfi, *Kriptopénz abc* , HVG- Orac Lap- és Könyvkiadó Kft, Budapest, 2019, pp.5.

[2]Szűcs Lászlóné Siska Katalin, *Slavery in Islamic law. Is it over or is it still going on?* Miskolc Law Review 11, pp. 16.

[3] Mátyás Környei, Legal issues *of blockchain and cryptocurrencies , 2018 ,* pp . 1. https://arsboni.hu/a-legnagyobb-talalmany-az-internet-ota-a-blockchain-es-a-kriptovalutak-jogi-kerdesei/ (Downloaded: 2021.06.05)

example, a company creates its own internal DLT-based corporate management system.[4]

The essence of DLT is that *(a)* the data stored on the network, as well as the algorithm underlying the operation of the network, can be accessed by any member of the network who is entitled to it based on the underlying algorithm, and that *(b)* ensures that only those activities can take place over the network that comply with the rules of the underlying algorithm.[5] As a consequence of automation and transparency, there is no need for a single central body to check and approve the activities carried out through the network, but rather they are verified and checked by the members of the network - in an automated way.

However, it should be noted that blockchain and DLT are two different concepts. [6]More specifically, blockchain is a type of DLT, as we will see later. The most common forms of DLT are:

Blockchain, a gentleman named Stuart Haber first published about the cryptographically encrypted blockchain in 1991, then further developing this theory, an unknown group called Satoshi In 2008, under the name Nakamoto, he created the first blockchain-based implementation, Bitcoin . [7]The purpose of Bitcoin was to reduce the cost of using money by eliminating financial intermediaries, to increase the security of financial transactions by using DLT, and to create a decentralized, democratic currency with the creation of Bitcoin.

The blockchain technology works in such a way that the party wishing to start a transaction on the network includes the transaction in a block and sends a message to the members of the network stating that they wish to execute the transaction included in the block according to the rules of the network's underlying algorithm. [8]The

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[4] Környei , pp. 2.

[5] Környei , pp. 4.

[6] Környei , pp. 4.

[7] Satoshi Nakamoto , *A peer-to-peer electronic cash system* , 2008, 1., https://www.bitcoinbazis.hu/utmutato/szatosi-feher-konyv/ (Downloaded . 2021.06.05.)

[8]Györfi, pp.10

members of the network independently check (verify) the transaction one by one. The copies of the transaction approved in this way, accepted by all members of the network, form a block. The block is encrypted by the members of the network, which in the case of Bitcoin is an extremely complex mathematical puzzle operation.

The approved and encrypted block is added to the chain of blocks previously created in the network, which will thus be one element longer. Blockchain security is ensured by two factors. The first is that the encryption is based on the so-called Merkle tree method, the essence of which is that each encryption is derived from the previous encryption. And the second factor is that the network always accepts the longest blockchain as real, i.e. the longest derived cipher suite. These two factors ensure that in order to hack the blockchain and change the data contained in it, at least the multiplied amount of computing capacity represented by the members of the network would be required.

Hashgraph , based on this technology, several transactions can be stored on the same time stamp. In this case, the accounting process is not linear, but network-like. DAG works on a principle similar to blockchain. Here, the system stores transactions in nodes, the confirmation of which requires several members of the network. In this case, if someone wants to start a transaction, they must first check 2 others, thereby validating their own activity.

Tempo , this solution is also similar to blockchain technology, but in this case the nodes contain only a part, a fragment of the ledger. Thus, speeding up the transaction process.

CRYPTOCURRENCIES AND BITCOIN

First of all, it is important to understand the virtual currency itself, we can find two different concepts. [9]The first is the opinion of the European Central Bank, according to which: "*virtual currencies are unregulated digital currencies that are put into circulation by users and controlled by developers, and accepted among members of a special virtual community.*" Another interpretation, that of the European Banking Authority, stands in contrast: "*virtual currency is the digital embodiment of a value for which neither a central bank nor an authority is responsible for putting it into circulation, nor can it be linked to traditional currencies.*"[10] It could be used first to break through the wall between cultures.[11]

It is also important to mention the token, it has a prominent role in the world of cryptocurrencies. [12]THE token a device that supplements the security of the internet banking system, nothing more than a code generator, which – depending on the time of use and the serial number of the token – provides a one-time use code, which is used as a security code by the internet banking system. [13]The security code is required when entering the system and when sending orders to the bank. The program running on the bank server checks whether the code sequence generated by the token assigned to the given user is the same as the code generated by the bank server belonging to the token with the given serial number. If the two-code series differ, the server will refuse to enter the system or send the order.[14]

The question may arise as to what are the factors that influence the price increase in the case of cryptocurrencies. For example, if its

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[9]Gábor Pataki, *Birth and death of cryptocurrencies* , Schönherz College Meetup , 2019

[10]Róbert Bacsó, *Virtual currency as the challenge of modern financial market regulation* , Civil Review, 2016, 12th edition. Number 2, 5.

[11]Szűcs Lászlóné Siska Katalin, *Human rights in the Arab world* , Debrecen, University of Debrecen Publishing House, 2014, pp. 6.

[12] https://www.tozsdeforum.hu/fogalom/token (Downloaded: 06/07/2021)

[13]Pataki, pp. 5.

[14]Pataki, pp. 5.

popularity increases, it becomes more widespread among more people, its commercial turnover increases significantly, and the geopolitical risks are clear and unambiguous.[15]

Using money is quite expensive and complicated and in most cases requires intermediaries: banks, money exchanges. To eliminate this Satoshi Nakamoto created a plan for a virtual money without central authority, manipulation and intermediaries, where there is no central bank and other financial institutions, but buyers and sellers can conduct internet transactions directly with each other, in a peer-to-peer system, just as BitTorrent works, but this comes with volatility. This became bitcoin, the first cryptocurrency, where crypto means cryptography, i.e. encryption, on which the system is based. Which, according to the prophets of the matter, can be the basis of a completely fair and impartial 21st century financial system, since it is forward-looking and innovative. [16]Like the XX. at the beginning of the century, during the Turkish reforms. [17]The media picked up the topic even at that time.[18]

Of course, virtual money in itself is not new, there have been plenty of them before. The novelty of the matter was that he solved it by introducing innovative cryptographic solutions so that virtual money could not be forged or spent multiple times. The latter problem arises from the fact that, while cash or metal change hands in a physical transaction, only data sets are used in virtual transactions.[19]

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[15]Bacsó, pp. 6.

[16]Bacsó, pp. 11.

[17]Szűcs Lászlóné Siska Katalin, Mustafa Kemal Atatürk's impact on the concept of Turkish identity and citizenship, with particular regard to constitutional regulations, *Law State Politics: Journal Of Law And Political Science*. 8 : 1 pp. 61-75 , 15 p. (2016)

[18]Szűcs Lászlóné Siska Katalin, Evaluation of *Kamâl Atatürk's reforms in the light of the coverage of the contemporary Hungarian press and the pro-government Turkish Cumhuriyet* , Debrecen, Hungary: Debreceni Egyetemi Kiadó (2020), 383 p.

[19] Hanga Kádár, Cryptocurrency - *Treasure that isn't there?* https://erdelyinaplo.ro/gazdasag/kriptovaluta-kincs-ami-nincs , (Downloaded: 2021.06.01.)

The value and popularity of the digital currency increased in a few years, as a decentralized currency independent of government and corporate interests was created, which is not connected to the traditional banking system. One of the biggest advantages is encryption: the parties conducting the transaction can remain completely unknown during the process if they so wish. Anonymity makes the transfers safe and traceable; the only thing users get are the 54 characters and a password for the account, but this also makes it possible to use it for money laundering and financing dubious transactions. As Nakamoto writes: "*What is needed is an electronic payment system based on cryptographic evidence instead of trust, allowing both parties to transfer directly between each other without the need for a trusted third party.*"[20]

Mining often comes up, and it may seem strange at first, but how can something intangible be mined. The issuer of virtual instruments that can be used for payment is not an institution that has obligations and responsibilities related to the issuance, but a community of users. These devices typically only exist electronically, and the so-called they can be stored in a virtual wallet. For such a device, so-called we can get to it during "mining". [21]Mining must be imagined in the way that someone makes the resources of the machines available to operate a virtual currency system, and receives money for that. It's essentially a business of sorts. It is similar to printing real money on behalf of the government in the form of a business, for which they would pay, but since it is virtual, it only requires the power of computers.[22]

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[20] Satoshi , pp. 12.

[21] Géza Sebestyén, Virtual currencies-real risks, 2018, https://mnbtanszekblog.hu/2017/11/27/virtualis-valutak-valos-kockazatok/ (Downloaded: 2021.05.29.)

[22]Sebestyén, pp. 2.

cryptocurrencies raises many questions [23]. If we look at the situation in China, we can see that China has the largest mining companies, such as AntPool , BTCC. They account for two-thirds of the computing capacity of the bitcoin network. For them, it costs $3,172 (approx. HUF 850,000) to mine one BTC. It is interesting, however, that SlushPool, wedged between them , is headquartered in the Czech Republic. They owe their popularity to the fact that they were the first mining association in the world and have been operating reliably since their foundation in 2010. Mining in one of the centers of the crypto world, South Korea, is the most expensive. Here, the extraction of 1 bitcoin costs about HUF 7 million, while the cheapest is possible in Venezuela, where barely HUF 140,000 has to be spent only on bills. In our country, our costs would be around HUF 1.4 million.[24]

According to the *position of* [25]the NAV, bitcoin cannot be considered a security based on the current legal regulations, since bitcoin does not have the legally required elements of a security. Nor can it be considered something that can be owned, because it only exists virtually. Due to its nature, it is essentially a payment promise that can be exchanged for money based on the current exchange rate. The acquisition of bitcoins in exchange for consideration therefore does not in itself generate income, and therefore does not result in a tax liability.

The *Department of Financial Regulation of the Ministry of Finance* also spoke about the issue and issued a written statement, according to which:

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[23] https://kriptoakademia.com/2018/05/29/ennyibe-kerul-1bitcoineloallitasa?utm_medium=site&utm_source=hirstart (Downloaded : 2021.06.02.)

[24]Kádár, pp.5.

[25] https://digitalcash.hu/2017/07/17/a-nav-allasfogglasa-a-bitcoinrol-tao-szempontok-alapjan/ (Downloaded : 2021.06.02.)

> "*The potential regulation of crypto-assets in Hungary is indeed a complex task, the issue cannot be treated as a civil law phenomenon in itself. From the legislative point of view, it can be said that the use of cryptocurrencies carries many dangers: for example, the risk of money laundering and terrorist financing, supervisory and consumer protection issues, or even the threat of cybercrime.* "[26]

According to Hungarian regulations, cryptocurrencies are not considered a monetary unit. Legal practice is expanding, and there are still many unclear questions. C-264/14. tax law aspects were analyzed in case no.[27] David Hedqvist planned to start a business in Sweden that would deal with the exchange of official national currency and bitcoin through his website. The consideration for the company's service would be a commission. The Swedish tax commission deemed the activity exempt from VAT during a conditional tax assessment.

The Swedish tax authority did not agree with this decision, and submitted the case to the European Court of Justice with a request for a preliminary ruling, which came to the decision that the virtual currency of bitcoin has no other purpose than to be used as a means of payment and accepted by some economic actors, therefore it is justified the application of the VAT exemption also in the case of services aimed at converting bitcoin and traditional currencies. After this decision was made, a breakthrough occurred, as the registration of cryptocurrencies and the taxation of transactions became significantly simpler and clearer in the European Union, including in our country.

However, it is important to emphasize that this is only a first-level decision, but the legislative history of the EU shows that the

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[26] https://fintechzone.hu/a-penzugyminiszterium-valasza-a-kriptovalutak-szabalyozasaval-kapaksotban/ (Downloaded: 2021.06.05.)

[27] Court of Justice of the European Union 128/15. s. PRESS RELEASE Luxembourg, 22 October 2015 – Case C-264/14 s. judgment in Skatteverket v. David Hedqvist

opinion of the General Counsel is a kind of preview of official regulations. This shows an interesting correlation with the minority policy of the late Ottoman Empire [28], as well as with Turkey.[29]

For now, the position of the Ministry of Finance is that it is not, but tokens should be investigated the question of its treatment as a security. Tokens can be divided into two basic groups, utility and securities. Based on this, we can say whether it is a security or not. The utilities token can actually be interpreted as a user token, the security we can talk about a token as a digital asset. [30]If it belongs to the utility group, in that case it is not classified as a security, but only as a property-valued right, i.e. the issuer is obliged to pay taxes. In this case, the costs during the issue are minimal, its financing becomes easier, but it gives fraudsters the opportunity to abuse it.

Here it is important to clarify that, according to the Hungarian Penal Code, anyone who misleads or misleads others in order to obtain an unlawful profit, and thus causes damage, commits fraud. [31]And the civil law situation can be linked here: misleading, intentional deception. In many cases, an issuer makes promises that it cannot necessarily keep, either deliberately deceiving the investor or for reasons other than its own fault, but in many cases the fraud is exhausted by the activity.

The other important fact is that a utilities tokens are extremely uncertain and therefore speculative, it is not possible to know in advance what will cause their value to increase, or what will cause it to decrease and when. In contrast, securities are in stark contrast token, since it is present as a security, we can get it in the form of an open sale, but the disadvantage for the issuer is the high production

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[28]Szűcs Lászlóné Siska Katalin, *Continuity and change. Islam and Secularism in the Late Ottoman Empire and Young Turkey,* JURA 23 : 1 pp. 131-139 , 9 p. (2017)

[29]Szűcs Lászlóné Siska Katalin ,*The development of minority rights in Turkey, with particular regard to the provisions of the Lausanne Treaty,* IUSTUM AEQUUM SALUTARE 12 : 3 pp. 173-184 , 12 p. (2016)

[30] Marco Fisher , *What is cryptocurrency and how to buy it,* 2019 , https://www.penznindzsa.hu/kriptovaluta/ (Downloaded: 2021.06.02.)

[31] Fisher , c. 3.

cost, and thus universally less profit. And why is tokenization itself good? An object with an independent value receives a uniform determined value, which also serves as a kind of security.[32]

Basically, the thing/tool doesn't stand up, it's more about a service, more precisely the promise of a service aimed at the future. With this approach, several legal problems arise that must be addressed: if it is a service, then the token is subject to VAT, and the income collected by the issuer is subject to TAO. This is important because, in the case of a classic share issue, the issuer does not pay TAO on the consideration for the issue and VAT does not arise, since the purchase of securities, like most securities, is not really included in the scope of VAT.

That is, they are taxed [33]during the ICO, but not during the share issue, and it follows that the legal problem is that in order to avoid securities regulation, the ICO issuers take on a lot of tax payment obligations and pass them on to the buyers, which will/may have a demand-reducing effect on the for customers. Securities regulation is a specific legal environment, usually issuers who comply with very strict information sharing obligations are basically exempt from any legal risk. On the contrary, ICO in many, mainly continental legal systems, such as the Hungarian one, too, is basically considered a promise, which is quite a big risk in terms of both civil and criminal law, since all security elements are missing, which is precisely why the securities were created.

For example, if the ICO's main information sharing document (the so-called " white paper ") claims something and then the company does not use the money used in the correct way, then an investor can relatively easily sue the issuing legal entity and the senior officials, and what is simpler, cheaper and more painful, is reporting him for fraud. This is a particularly high risk, since in the case of a

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[32] Fisher , c. 5.

[33]https://index.hu/gazdasag/2017/12/18/bitcoin_kriptopenz_kriptovaluta_blo kklanc_virtualis_penz_befektetesi_lufi_spekulacio_21._szazadi_penzugyi_rendszer/ (Do wnloaded : 2021.06.02.)

traditional first securities issue, companies that already have at least three closed years and have real income and a market- validated product or service ask for money. [34]On the other hand, the ICO is mostly an opportunity for companies that are looking for money for basic product development, i.e. they really have almost nothing yet. So if the development is delayed, the promise is no longer fulfilled.[35]

The issued token should not be a security, this is a general demand, that's why they try to call it another way, usually as a utility token. Utility token is basically the pre-financing of the specific service or product, which constitutes the raison d'être of the issuer's business model, where the signing party receives a token , which represents an entitlement in relation to the availability of the future product/service, which can be priority, a discount or both. As an example, if the Tesla 3 subscription is a utility would work on a token basis, then the token clerk would be given the opportunity to buy the Tesla 3 before the general public (an entitlement in itself), to which other elements can be added, such as e.g. price discount, some extra service.

But the point is that the utilities token is not a share, does not give votes, dividends or other rights and its value cannot depend directly on the issuer's financial situation. This is somewhere a paradox that is really difficult to solve well: utility token's promise is that it is not a security, however, the vast majority of tokens are bought for speculative purposes in the belief that their value will increase.[36]

Now let's review what these certain stablecoins are, they are nothing more than cryptocurrencies that are tied to some other instrument, covered by it; as a result, they have a stable exchange rate

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[34]Szűcs Lászlóné Siska Katalin *Thoughts on the 21st century search for Turkish foreign policy,* JURA 24 : 1 pp. 427-437 , 10 p. (2018)
[35]Sebestyén, c.5.
[36]Pataki, c. 6.

on various trading platforms and crypto exchanges. [37] If we look at it from Cefi's side, the issuer keeps the given asset in custody, which can be fiat money, or even another cryptocurrency, even precious metals traded on the market, or other goods, but anything else, any asset can be tokenized.

With this solution, stablecoins eliminate high volatility, which is otherwise a common feature of unstable cryptocurrencies found on the market. The reference tools that promise stability are usually not DLT-based, but traditional underlying values that even exist in physical reality, and are stored " off-chain " accordingly, thus also being able to minimize financial risk. [38]The accumulated underlying collateral is managed and traded in full accordance with the current, relevant legislation, kept in payment accounts and even in safes; " off-chain " hedged stablecoins therefore actually embody the fiat money that serves as their hedge in the digital space; assets tokenized in this way "stand in" as a kind of guarantee capital for the issued stablecoins.

And what is of particular importance, the same works in reverse: with stablecoins, at least the possibility of return and redemption is guaranteed - so the issued stablecoin can be freely exchanged for the underlying asset held as collateral. The experience so far shows that the issuers of stable cryptocurrencies rarely actually and continuously have the full underlying coverage at their disposal, in fact. The individual who wants to purchase [39]a stablecoin is therefore forced to trust the issuer that, on the one hand, it will actually issue the stablecoin, and on the other hand, it will be just as willing to redeem it, even if the price of the given coin is falling on the market.

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[37] Bálint Masszi , *#MiCA #stablecoins #e-money-issuing institutions?* 2021, https://arsboni.hu/mica-stablecoins-elektronikuspenz-kibocsato-intezmenyek/ (Downloaded: 12.06.2021)

[38] Masszi , c. 4.

[39] Masszi , c. 4.

In other respects, there are no essential guarantees for the rules of redemption, the exchange rates, the actual existence of full coverage and the fact that the issuing entities are not absorbed all of a sudden, in Hungarian there is no essential guarantee for investor protection - unless it counts as such if, for example, a CeFi company the size of Facebook gets involved into a stablecoin project, since in this case people's trust in the product could jump to such an extent, and its acceptance in Facebook's already existing infrastructure would be so broad (Facebook wants to reach billions of new users in the coming years) that it could endanger the traditional financial system. [40]In June 2021, Russia announced an independent stablecoin.[41]

THE DIGITAL FINANCIAL PACKAGE

On November 24, 2021, the Council adopted its position on two proposals that are part of the digital financial package - the proposal for a regulation on crypto asset markets (MiCA regulation) and the proposal for a regulation on digital operational resilience (DORA regulation). This agreement constitutes the Council's negotiating mandate for the tripartite negotiations with the European Parliament.[42] The MiCA Regulation aims to create a regulatory framework for the cryptoassets market that supports innovation and exploits the potential of cryptoassets , while ensuring financial stability and investor protection. The purpose of the DORA regulation is to create a regulatory framework for digital operational resilience , whereby all businesses ensure that they can protect against ICT-

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[40] Masszi , c. 7.

[41]Szűcs Lászlóné Siska Katalin, *Basic issues of international law in relation to the theory and history of international relations: textbook for public administration managers* , Debrecen, Hungary: Debreceni Egyetemi Kiadó (2010), 255 p.

[42]Szűcs Lászlóné Siska Katalin *Thoughts you the Special Relationship between Nationalism and Islam in Particular the Late Ottoman Empire and the Early Turkish Republican Era ,* JOURNAL ON EUROPEAN HISTORY OF LAW 8: 1 pp. 121-129 , 9 p. (2017)

related disruptions and threats in order to prevent and mitigate [43]cyber threats .

The Commission presented the digital financial services package on September 24, 2020. The package consisted of the following documents: the Communication on the EU Digital Financial Services Strategy and the Regulation on Markets in Crypto Assets (MiCA Regulation), the Regulation on Digital Operational Resilience (DORA Regulation) and the Pilot System for Market Infrastructures Based on Shared Ledger Technology proposal for a regulation (DLT regulation).

The digital finance package bridges the gaps in existing EU legislation by ensuring that the current legal framework does not impede the use of new digital financial instruments, while ensuring that these new technologies and products meet the financial regulation and operational risks of businesses operating in the EU. fall under the scope of its handling rules. Thus, the purpose of the package is to support innovation and the spread of new financial technologies, while simultaneously ensuring an appropriate level of consumer and investor protection.[44]

ISSUES AROUND BLOCKCHAIN AND BITCOIN

Bitcoin has several characteristics that make it a desirable asset in the eyes of criminals. Thus, for example, its anonymity, decentralization, difficult to reserve and speed are all factors that bring benefits not only in everyday life.[45] In black markets operating

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[43] https://www.consilium.europa.eu/hu/press/press-releases/2021/11/24/digital-finance-package-council-reaches-agreement-on-mica-and-dora/

[44] https://www.consilium.europa.eu/hu/press/press-releases/2021/11/24/digital-finance-package-council-reaches-agreement-on-mica-and-dora/

[45] László Dornfeld , *Bitcoin , the tulip of modern criminals? https://arsboni.hu/bitcoin-a-modernkori-bunozok-tulipanja/* (Downloaded : 12.06.2021)

on the dark web (the part of the Internet that is not indexed by search engines), cryptocurrencies are a common means of payment, and they can be used for many things, from assassins to child pornography to drugs. Silk _ When eradicating the black market known as Road (Silk Road), the FBI seized millions of dollars' worth of bitcoins. While TOR (The Onion Router, an encryption tool developed by the US Navy) created secure access, Bitcoin became the PayPal of black markets operating on the Dark Web.

On Alpha Bay, one of the largest digital black markets, 350,000 different illegal products could be purchased using bitcoin. According to the results of[46] the research involving all bitcoin transactions, about 24 million people used bitcoin for illegal purposes, that is, a quarter of all users. There are 36 million illegal transactions per year, which is 44% of all transactions, and their total value is $72 billion per year, or a fifth of the value of all transactions. In addition, half of all bitcoins in existence have been involved in illegal transactions at some point. In addition to transactions, bitcoin can also play a role in other crimes.[47]

For example, the recently increasingly widespread extortion viruses (ransomware), which encrypt the data stored on the computer and promise to unlock it only in return for the payment of a certain amount. The most famous of these was WannaCry, which infected hospitals and companies. These programs usually ask for payment in bitcoin, which, in addition to the previously described advantages, is another reason that it can be used in all parts of the world, as opposed to national currencies.

A good example of the inhumanity of such an incident is the case of the MedStar private clinic in Washington DC, whose systems were infected with a ransomware virus in 2016, so the patients' medical data was also locked, which made it very difficult to provide them with professional care. All of this raises the question: would

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[46] Dornfeld , c. 2.
[47] Dornfeld , c. 3.

someone be more likely to pay off the blackmailer if their own life depended on it?[48]

We cannot go without saying that not only bitcoin can be used, but also produced illegally. [49]Bitcoin is created by "mining", that is, by processing and approving transactions using a mathematical algorithm. This requires computing capacity, however, as more and more bitcoins are in circulation, mining requires an ever-greater investment of power. We read about many cases where they wanted to use computers for mining without authorization, for example a supercomputer in Russia. But ordinary users ' computers can also be infected with a virus that then uses the machine for mining without the user's knowledge.

The damage to the victim is thus multiple: not only does he not benefit from the mined bitcoins, but his computer also depreciates faster, since the attacker's goal is to generate as many bitcoins as possible, thus deliberately overloading the computer's hardware. However, there are factors that work against the use of bitcoin. As Sarah Meiklejohn points out, if someone catches a drug dealer with cash, they will be charged with a crime, but if they get hold of the bitcoins, the transaction list reveals the entire criminal activity.[50]

The unclear legal status of bitcoin and digital money creates an excellent basis for its use for money laundering. [51]There is already a serious debate about whether these can be defined as money or property. In the United States, Florida v. In the Espinoza case, Michell was acquitted of money laundering charges by the district court Espinoza, since " *Bitcoin cannot be hidden in a mattress like cash and gold" and thus does* not require the use of banking infrastructure. Such a decision may also result in the fact that digital currencies are not subject to the investigation of anti-money laundering mechanisms,

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[48] Dornfeld , c. 3.

[49] Anna Alexandra Lakatos, *IT crimes and bitcoin,*. Internal Affairs Review 2017/1. s. 24.

[50]Locksmith, c. 25.

[51] Dornfeld , c. 5.

which means that their use will be even more attractive for criminals. However, there is no unified position on this either. United States v. In the Faiella case, for example, the court ruled that the transfer of bitcoin is considered a transfer of money.[52]

One type of money laundering using bitcoin can be using your own money in online video games. In this case, the perpetrators send the in-game money to each other and then exchange it for bitcoins or other digital money, so it may appear that they have paid for some kind of in-game advantage, when in fact they have used it for money laundering. They also have useful tools at their disposal, such as Dark A wallet application that encrypts and mixes the transactions of other users, so that there are no traceable traces of the movement of money using bitcoin. Money laundering on crowdfunding sites is similarly untraceable, and among them there are more and more sites that can be supported with bitcoin.

There is also the possibility that someone can buy bitcoins with a prepaid card on sites that support this (e.g. circle.com), which also creates an opportunity for money laundering. Actions against money laundering committed with such tools also have practical difficulties, since there are as many different mechanisms for their operation as there are digital currencies. It is not possible to develop a uniform model for law enforcement agencies, since, for example, how easy it is to convert individual currencies into traditional cash also varies. In addition, the authorities have to face many investigative problems, such as the fact that there is no central body from which we can request the materials necessary to conduct the procedure.[53]

The financing of terrorism has been considered a crime in most parts of the world since the UN convention on this matter adopted in 1999. [54]In many cases, this prohibition is also prohibited by other

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[52] Dornfeld , c. 5.

[53] Dornfeld , c. 7.

[54] András Zoltán Nagy - Kitti Mezei, *The extortion virus and the botnet virus as the two most dangerous computer viruses of today.* In: Gyula Gaál – Zoltán Hautzinger (ed.) From Saint László to modern Hungarian law enforcement. Pécs, Hungarian Military Society, Border Guard Department, Pécs Department, 2017. 163.

instruments, such as EU Directive 2017/541 on the fight against terrorism and Directive 2015/849 on their prevention in financial systems. Terrorist financing and money laundering are often treated together, because their tools are similar, but their goals are opposite: while money laundering wants to show the amount of money as coming from a legitimate source, terrorists, on the other hand, seek funds for illegal activities.

However, if bitcoin can be used for money laundering, it is clear that it can also be used to finance terrorism. In December 2017, a Long Island resident was arrested after sending $85,000 to ISIS in the form of bitcoins. A website close to ISIS published a link where they accept donations in bitcoin. On behalf of the bitcoin community, Kai Sedgwick responded to the allegations, calling it a fear-mongering attempt by senior politicians who "still print the Internet."

In his opinion, [55]bitcoin is not ideal for terrorists in many ways: transactions can be traced and are not as anonymous as many people think; the daily operating costs of terrorist organizations must be covered in paper money, and the withdrawal of money already leaves visible traces; the amount of handguns they need cannot be purchased online; and the cost of treatment is too high. These arguments do not seem very convincing, since the financing of terrorism through the traditional banking system already faces enormous difficulties these days.[56] But as with money laundering, the shortcomings illustrated there make online banking and bitcoin a much more attractive alternative, where the outlined problems are more of a nuisance than a deterrent.

The European Union wants to regulate bitcoin precisely in connection with the financing of terrorism. For example, they would require merchant and wallet sites to identify their users, limit the use of prepaid cards, meet transparency requirements, and give member

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[55]Nagy-Mezei, c. 165.

[56]Szűcs Lászlóné Siska Katalin ,An overview of the development of women's rights from the foundation of the Republic of Turkey to the present day, *Jog Allam Politik: Journal Of Jog And Political Science* 2 pp. 39-54 , 16 p. (2017)

state authorities better access to certain data. However, certain member states have taken a stand against the regulation for the time being, fearing that it would negatively affect their economy.[57]

how does data management develop in the case of blockchain and bitcoin? In the bitcoin system, the blockchain technology in such a virtual payment system for development was used in an anonymous way can be used ´, since it is not necessary to enter personal data to carry out operations with individual coins. Regardless, such a blockchain is imaginable a system using technology, in which the blocks are also used to store personal data, so e.g. stored in the block, basically for payment personal data is also linked to the data used.

If in the blockchain some blocks are also used to store personal data, so the question may arise as to who qualifies as a data controller in this case. Infotv. _ data controller according to the concepts described above primarily that person is considered to be the person handling the personal data its purpose determines, makes relevant decisions and _ executes. Since the blockchain about such a decentralized network we are talking about where there is no central one entity that exercises control over the operation of the system and done with the data over transactions, therefore the data is practically handled by individual users are carried out.[58]

The blockchain regarding therefore, each user who adds blocks and data stored in them to the system (e.g. in connection with the bitcoin system coins " miner ") as a data controller qualifies as. Later, the user who adds data to the system is exclusive disposal gets authority over the data stored in the blocks, so he can determine which transactions the data is will be used for its implementation. If the transactions through stored in the block disposition over personal

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[57]Locksmith, c. 30.

[58] *The National Data Protection Authority and Freedom of information Authorities its position is blockchain technology _ _ data protection regarding its connections* , 2017, 1. https://naih.hu/files/Adatved_allasfoglalas_naih-2017-3495-2-V.pdf (Downloaded : 12.06.2021, in citation: NAIH)

data permission for delivery got another one user, from then on this user (the recipient of the data) acquires exclusive rights over the data provision, so he will be the data controller qualify. The blockchain technology in connection with this, the concept of data processor can be interpreted in the case that the original data controller is authorized to dispose of the data, e.g. an assignment with a contract different ″ forward defined data management operations (e.g. transactions) are commissioned by another to the user .

In the blockchain stored personal data management its legal basis is currently in force legislation based on the person concerned consent or the legitimate interest of the user can form [Infotv . Section 5 (1) point a) and Section 6 (1)]. If the data subject does not consent to the storage of his personal data by the ″ user ′ in control of the data stored in the block , or to the operations with those complete , furthermore , the user cannot prove a legitimate interest in relation to the data processing , so the data processing cannot be lawful .⁵⁹

Let's take a look at how the question of jurisdiction plays out. Due to its decentralized nature , users will different″states can also be explained by data controllers under their jurisdictions their activities.

Processing of personal data regarding individuals _ protection and on the free flow of such data on the basis of Article 29 of Directive 95 /46/EC (hereinafter : Directive) created Data Protection Working Group (hereinafter : Working Group) on the concepts of " data manager " and " data processor " sólo′ 1/2010. In his opinion (WP169) he explains in this regard: " *The quality of data management primarily its factual the consequence of a circumstance that a legal entity so decided to own for its purposes processes personal data .*" ⁶⁰

The Data Protection Working Group also explained that the definition of the concept of data processing plays a prominent role in deciding which state's national law will be applied to the given data management or to certain operations performed on the data .

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⁵⁹NAIH statement, c. 2.
⁶⁰NAIH statement, c. 3.

According to Article 4(1)(a) of the Directive , the main applicable´ law ´ rule is that each member state applies its national provisions , if the data processing "*the Member State in the area of the activities of the data processor* o˝ *an organization in the framework of are carried out* " .

About the right to apply , accepted by the Data Protection Working Group sólo´ 8/2010. opinion number´ (WP179) according to the definition of the applicable law in terms of its " activities in the framework of the concept of ˝ is the decision˝, not where the personal data is stored . The concept of this term does not mean that the applicable law is the law of the Member State where the data controller is established, but where the data controller has an organization for data processing participates in related activities . _ If a person own activities in the framework of processes personal data, the applicable law will be the law of the Member State where this person is is [61]staying

In connection with the above, the Authority also draws attention to the fact that the European C- 230 / 14 dated October 1 , 2015 . settlement in judgment no _ term C-131/12. in comparison to judgment no.´ (the so-called Google Spain judgment) interpreted . The EU does so decided C-230/14. in his judgment no _ _ _ _ _ it should be interpreted as if it is possible different Member State to protect personal data concerning the regulation of application , as where the controller of this data is registered, if this data controller is permanently little measure˝real and actual is active in this Member State area , in the framework of which this data management takes place .

The blockchain technology in connection with the jurisdiction your question so the clarification of that preliminary question decides to manage the data its purpose determining´ data manager˝ which state area manages the data . This is the blockchain to technology projected , it will be the state where the data controller˝handles the data related operations _ is carried out , so e.g. transactional issues

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[61]NAIH statement, c. 3.

referral commands, accesses the blockchain and adds data to it (e.g. " coins " in connection with the Bitcoin system miner out"), and the operations to perform issues relevant´ instructions . In the blockchain "physical" location of stored data in this respect irrelevant .[62]

A blockchain technology user´ data manager˝data protection in connection with its inspection by the prosecuting authority according to the main rule , it will be the one in which the data controller is responsible for data processing operations performs , e.g. issues referral orders, miner servers operates etc. The international with data transmission and on the border with cross-cutting data management related matters entered into force on May 25, 2018 stepped General Data Protection Regulation Article 50 defines the European Union´ member states and data protection authorities for cooperation framework .[63]

MORE ALTCOINS

Ethereum: The Ethereum[64] an open source, public, community, blockchain based on on distributed computing based computer technology platform and cryptocurrency , which also has a smart contract function (script). Therefore, ethereum is not only a cryptocurrency , i.e. digital or electronic money, but also a platform that can be used to create different applications for the blockchain. A so-called decentralized Turing-complete virtual computer provides Ethereum Virtual Machine , which consists of an international network of public nodes. Ethereum also provides a currency called ether cryptocurrency tokens , which can be transferred between accounts and can be used to compensate for computing performance. " Gas " is an internal transaction pricing mechanism that filters out spam and provides resources for the network. Ethereum is

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[62]NAIH statement, c. 2.
[63]NAIH statement, c. 2.
[64] https://ethereum.org/en/ (Downloaded : 12.06.2021)

perhaps the most famous and well-known cryptocurrency at the moment , i.e. the bitcoin besides being one of the most popular altcoin (this is the name of cryptocurrencies next to bitcoin , which was created by combining the words bitcoin and alternative). In fact, it ranks second in the cryptocurrency rankings based on market capitalization .

Its fans also call it Bitcoin 2.0. The creation of Ethereum in late 2013 Vitalik It was suggested by Buterin , a researcher and programmer of cryptocurrencies . The main goal was to make a create an altcoin , which provides a solution to the problems that occur during the operation and use of bitcoin (for example, the long transaction times in the world of cryptocurrencies , or the 51% hashrate ownership problem that occurs in the case of centralized "miners"). The financial background for the development was provided through an online community fundraiser that took place in July-August 2014. The system was launched on July 30, 2015 with 11.9 million coins, which were "pre-mined" for community purchases. This represents approximately 13% of the total volume in circulation.

Co-founder Dr. Gavin Wood created the technological "Bible" of Ethereum . The latter is a virtual machine (Ethereum Virtual Machine - EVM) that manages the online ledger and runs the smart contracts. Another co-founder, Joseph Lubin , created the Brooklyn-based startup ConsenSys , which develops decentralized applications. In 2016, there were significant movements and fluctuations in the exchange rate, after the opening price of USD 0.94, the price peaked at USD 20.85 on June 17, 2016, then suddenly fell close to USD 10, and ended the year at around USD 8 closed it. The growth was still amazing, 749%.

The sudden drop in the exchange rate was primarily due to hackers taking advantage of security flaws to steal a larger amount. However, users quickly regained their trust in cryptocurrency and since the developers created a so-called with a hardfork , a new coin was created in which the security flaw was eliminated, Ethereum

essentially split in two. Thus, in 2016, the DAO (decentralized autonomous organization) ie decentralized autonomous organization due to the collapse of the project, two separate blockchains were created from Ethereum. The previous version Ethereum Classic continues to run under the name (ETC) and the new, disconnected version continues to be called Ethereum (ETH).

Litecoin: A Litecoin[65] a cryptocurrency that On October 7, 2011, Charles Lee (formerly of Google) posted a on GitHub. The name also applies to the operator of the means of payment open-source software and the distributed network created with it. Litecoin shares many similarities with With Bitcoin, the main difference between them is in the cryptographic algorithm used to generate new blocks. Like Bitcoin, Litecoin does not depend on central issuers and authorities. Litecoin is a peer-to-peer it relies on a distributed database stored by network nodes. The database contains payment data, guaranteeing the basic requirements for electronic means of payment. The safety digital signatures and proof -of- work given by the system.

Litecoins can be safely stored in a wallet file, on a personal computer, mobile phone, external data carriers , or with cloud-based providers, and to send and receive them , only the Litecoin address of the sender and recipient is required. The peer-to-peer structure and the lack of central control prevent any authority from controlling or influencing the amount of money and transactions in circulation, which makes manipulation and inciting inflation impossible. Due to its unofficial nature, it does not have an ISO code, but it is a commonly used designation LTC.

One of the biggest differences between Bitcoin and Litecoin is the total supply. This is where Litecoin differs from Bitcoin the most. Bitcoin 's network can never have more than 21 million coins , while Litecoin 's number is 84 million. In theory, it seems like a huge advantage, although its real-world impact is negligible. This is because both coins are divisible by millions of times. Divisibility is

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[65] https://litecoin.org (Downloaded : 12.06.2021)

important because it allows users to buy very cheap products and services regardless of how high the price of a unit of BTC or LTC is.

Dogecoin: Dogecoin is [66]a cryptocurrency that appeared in December 2013. The developers originally intended it as a joke, based around a current Internet meme called Doge. Created by Jackson Palmer, the software was created based on the source code of other cryptocurrencies . Users started using it as a like, sending Dogecoin to each other in exchange for interesting content, which made Dogecoin its capitalization jumped to 60 million dollars in just a single month and became a well-known Internet currency. In 2015, one of the most well-known coin types after Bitcoin and Litecoin , it does not depend on the issuing institution, its operation is similar, the technological principles of its operation are the same as those of these two virtual currencies. By the end of April 2017, Dogecoin its capitalization is already more than 81 million dollars. Dogecoin operates independently of governments, financial institutions, or organizations .

Dogecoin addresses start with the letter D or A, each address (public key) has a private key with which transactions are signed. Dogecoin is scrypt _ uses an encryption algorithm , the public key can be clearly calculated from the private key. Only the person who has the corresponding private key can send Dogecoin from the given address. Transaction fees are negligible, a certain number of transactions can be carried out for free in each block. Transactions are executed immediately (typically within one second) and cannot be reversed. The block time of Dogecoin is one minute - this means that transactions are credited within 2-3 minutes and recorded in the blockchain - and it is enough to wait one and a half minutes for the first confirmation of the transaction. Dogecoin is free to mine. During mining, transactions are recorded in the blockchain. Whoever produces the safest, longest block receives the amount of Dogecoin for mining the block. A private key is associated with a normal

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[66] https://dogecoin.com (Downloaded : 13.06.2021)

Dogecoin address, but multi-signature addresses can be created with the help of separate web services - in this case, the signatures of several participants are scarce for the transfer from the address (for example, 2 out of 3 or 3 out of 5). In addition to the official Dogecoin client, there are also other clients and online wallets.

CONCLUSION

In summary, cryptocurrencies play a significant role in our everyday life. Nothing proves this better than the fact that several states and international organizations have started to deal with the issue. For example, the state of Honduras will recognize Bitcoin as a means of payment from June 2021. The European Union has a separate recommendation for the legal regulation of blockchain and cryptocurrencies. From November 2021, they will also be included in the effective Hungarian personal income tax law, because the Hungarian state imposes a 15% tax liability.

ACKNOWLEDGEMENT

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ADDITIONAL INFORMATION

Declaration of Conflicting Interests

The author(s) stated that this work is original and has not been previously published in another journal or publication. The author(s) also declared that there is no conflict of interest in the publication of this article.

Funding Information

None

Open Data Statement

All data and information in this article were available without any restriction

Reproducibility Statement

Author Biography

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