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## **Money of the devil?**

### **The Bitcoin**

In recent years, we have been hearing more and more about the Bitcoin, a currency that could unite different currencies, thus making money exchange a very simple process. However, it has also been referred to as the money of cyber criminals since it allows their users to remain anonymous during shady internet transactions.

### **What is a bitcoin?**

Bitcoin (BTC) is a virtual currency or payment system that has sparked a number of debates in society and in the financial world since its release in 2009. Bitcoin is an immaterial open source software which consists of bits. BTC was invented by Satoshi Nakamoto, though this name is likely just a username, who released this digital asset immediately after the outbreak of the financial crisis. There are different opinions about its grounds; according to its opponents, the Bitcoin makes absolutely no sense, it is simply the criminals' payment method, while others claim that it is really just play money that could be used only for gambling in the virtual world.

According to economists, the Bitcoin may have the ability to unite the different currencies of the world.

In Hungary, the Bitcoin is not currently supported by the Hungarian National Bank but we will talk about their stand later on.

We should point out that although the Bitcoin as a payment method is not linked to any financial institution or authority, the Bitcoin database itself contains the information on all the transactions, thus fulfilling the basic requirements for an electronic payment method. The security is provided by digital signatures and the proof-of-work system<sup>1</sup>.

The virtual currency can be stored safely in a so-called wallet (a customized wallet), which can be accessed through a mobile application or software. The application allows anyone to buy or receive bitcoins and the users to see the daily balance in their virtual wallet. This also means that it records every single financial transaction, every one of which includes a digital signature.

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<sup>1</sup> The proof-of-work is a computer validating system in which the condition to fulfill an operation is the completion of a task that requires some sort of calculation.

## **Features of the Bitcoin:**

- it is a virtual currency, that is, it is not present in the real world
- it is decentralized but only to the necessary extent
- it is public
- it is anonymous

## **How does the Bitcoin system work?**

Each financial transaction is public, so anyone can see them. This "simple rule" can be enforced by having the system run a hash algorithm through every transaction. Hash algorithms are one-way encryption techniques that are used for the encryption of computer data. The algorithm converts computer data into numbers, which are called hash values. If this number has the right length, it can make an individual data completely identifiable. The hash code makes clear reference to the encrypted data, but the data encrypted cannot be reconstructed by its disassembly<sup>2</sup>.

Therefore, this means that not the transactions themselves will be secret, but the identification of the users will be very complicated or even impossible. Instead of names and account numbers, the transactions have long, undecipherable string of characters, which can vary with each financial transaction. This system allows anyone to make purchases that are hard to trace back, or can even leave the buyer completely anonymous<sup>3</sup>.

## **Areas of application:**

When you browse the Internet regarding the Bitcoin's areas of use, you will find mainly positive feedback about it. There is no transaction fee, it is really fast and you can even make direct (P2P) transfers. All this while retaining the anonymity of the users, which can be fully guaranteed through specific programs.

On one hand, as I mentioned earlier, bitcoins do not depend on any authority or financial institution but it is possible to pay with bitcoins for a variety of goods and services, but it can also be used to purchase virtual weapons, lives and bonuses in various computer games.

Today bitcoins can even be used to buy plane tickets with some airlines, or make purchases in cafes.

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<sup>2</sup> <http://ajk.pte.hu/files/file/doktori-iskola/eszteri-daniel/eszteri-daniel-vedes-ertekezes.pdf> (downloaded on December 4, 2015)

<sup>3</sup> <http://bitcoins.hu/> (downloaded on December 6, 2015)

## **Mining:**

Bitcoin mining is the course through which computing power is spent to process the network of Bitcoin transactions. At that point, the computer will start to solve the necessary cryptographic functions, and the user receives some bitcoins as a reward in exchange for the capacity offered for the "common good".

Originally, the miners used their computer's CPU, such as Intel i7s, for this purpose until some figured out how to utilize their GPUs along with special software support, and so achieved much better results. Today, most of the miners work in mining pools because as an individual miner the chance to generate a block (which is currently worth 25 bitcoins) is very slim<sup>4</sup>.

## **The legal regulation of BTC in Hungary**

In Hungary, the Bitcoin as a method of payment is still not regulated by any law, therefore its purchase, use or trade is not prohibited. However, the Hungarian National Bank (MNB) has issued a warning to all those with the intention to buy bitcoins affirming that "the central bank does not control the institutions organizing virtual payment methods and the trading with the virtual currency, therefore the obligation for indemnification of the Hungarian warranty fund does not apply to them in case of the organizer's insolvency."

According to the Hungarian National Bank, investing in such assets has a high risk because the foreign companies and individuals that issued them do not fall under the jurisdiction of the Hungarian National Bank (MNB) nor the European Union's supervisory institutions. This means that if the consumer (or rather "user" since we are talking about a completely virtual currency) has any financial losses during such "investment", nobody will compensate them. Therefore, the potential victims cannot seek reimbursement from the National Deposit Insurance Fund (OBA), nor the Investor Protection Fund (IPF). The 2013 Hungarian legislation CCXXXVII currently in force regarding credit institutions and financial enterprises does not include any definition that would allow the classification of the Bitcoin as a payment method, as a result, it cannot be considered a legal tender.

At the same time, the Hungarian National Bank does not exclude trading with bitcoins, but there are tax implications!

Unlike Hungary, some countries have already imposed certain regulations for the Bitcoin.

## **International overview**

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<sup>4</sup> <http://bitcoin.hu/archivum/bevezeto/banyaszat-az-else-10-lepes/> (downloaded on December 5, 2015)

Germany has already recognized the Bitcoin as an official currency. This helped to overcome the flaw that allowed such companies to operate without control, as now Bitcoin trading companies are considered financial service providers, and as such, are subject to strict and controllable conditions and can only operate with a license. This license is issued by the BaFin (Bundesanstalt für Finanzdienstleistungsaufsicht), which continuously monitors them. Virtual money trading companies must meet the following criteria:

- \* initial capital of EUR 730,000
- \* qualified management
- \* submission of a detailed business plan
- \* meeting the standards of adequate capital
- \* application of anti-money laundering mechanisms
- \* regular reporting to BaFin<sup>5</sup>

It is clear that the German legislation covers everything that can be expected from a company conducting financial activities to make the investors feel secure.

### **Russia:**

Russia, on the other hand, would even prohibit downloading the software that would allow the use of virtual money. Anyone buying or trading with bitcoin would receive an administrative fine. The fine will depend on the value of the purchased or sold bitcoins.

### **The Court of Justice of the European Union:**

The Court of Justice of the European Union (hereinafter the “Court”) has made a preliminary decision in relation to Sweden, when a Swedish software developer sold bitcoins on the internet, therefore would have been subjected to pay transaction tax according to the Swedish tax authority. The software developer appealed this decision claiming that no transaction commission needs to be paid after the Bitcoin. The Court explained in its preliminary ruling that the Bitcoin is not a tangible property but a direct means of payment, therefore no value added tax needs to be paid after its sale.

At the moment, there is no agreement within the EU about the taxability of the Bitcoin. So for example, in Belgium and the United Kingdom you do not have to pay VAT, but in Poland you still/already do.

### **Bitcoin ATMs**

One possible option for purchasing and trading with Bitcoin is the use of BTC ATMs.

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<sup>5</sup> [bitcoin.hu/tovabb-konkretizalodik-a-nemet-szabalyozas/](http://bitcoin.hu/tovabb-konkretizalodik-a-nemet-szabalyozas/) (downloaded on December 6, 2015)

The ATM (Automated Teller Machine) is an electro-mechanical device that allows the cardholder to withdraw money from their bank account, or use other services, such as balance inquiry or cash deposits.

These devices can read bank cards with magnetic strips or chips. According to the Act of 11/2011 (IX.6.) of the Hungarian National Bank (MNB), an ATM is a device that allows clients of financial institutions (banks) to withdraw banknotes from a checking account using a bank (debit) card. In Hungary, Bitcoin ATMs do not fall within the scope of this regulation since during the money withdrawal or payment transactions through BTC ATMs are not linked to a checking account, so they are actually more similar to a vending machine from which you can buy something in exchange for money.

### **The Bitcoin and crime**

Like every novelty, the appearance of BTC also raises the question of whether or not it can be abused.

In my opinion, this virtual currency does not allow any greater opportunities for criminals than a knife in their hand, that is, just because someone buys this currency, it does not mean that they will commit a criminal offense, or would use it to pay for illegal activities, though we cannot exclude this possibility.

The Bitcoin's anonymity feature provides an opportunity to commit crime with it, for example, money laundering or a terrorist act. At the same time, of course, it also allows users to pay for a plane ticket or restaurant bill at businesses that accept bitcoins.

### **The link between money laundering and the Bitcoin**

Due to its characteristics, the Bitcoin is one of the most suitable methods of payment for money laundering and concealing the source of money coming from criminal activities.

The mere fact that it is available anytime and anywhere through an IT network is a huge advantage. It does not depend on the location or the business hours of banks. Basically, you only need two things to receive a transfer in this virtual currency, that is, internet connection and a computer software. As I mentioned earlier, in Hungary there is no law that would prohibit or even regulate the financial transactions made with bitcoins. These faults along with other characteristics of cybercrimes, make police investigations rather complicated.

Money laundering is any unauthorized financial activity that helps conceal the origin of money coming from organized criminal activities so that it appears legal to authorities. Bitcoin is perfect for this since it allows hiding or laundering the illegal income by using the internet or Bitcoin ATMs.

However, we cannot generalize, because making purchases or trading with bitcoins does not automatically mean that the person obtained the money through criminal activities.

The question may arise, are the Bitcoin ATM operators committing a crime or not? In my opinion, they are not, unless their purpose of setting up these machines in the first place was to launder their own illegal income or deliberately help others to do the same.

Money laundering is a crime related to organized crime and terrorism. Since money laundering is an activity that helps to conceal the criminal source of the income and make it look legal, it is clear that money laundering is „just” a secondary crime that is preceded by another delinquency.

In the case of the Bitcoin, we cannot conclude that it was created to facilitate money laundering, though, due to its previously described features, it is a suitable tool in the hands of criminals.

### **Terrorism and Bitcoin**

As a result of the recent, increasing number of terrorist attacks, it has been discovered that the Islamic State paid for the plane tickets to enter Europe with bitcoins. In fact, they paid for the weapons and explosives with this virtual currency as well. They are able to purchase BTC using a traditional payment method, then, taking advantage of its anonymity, they use bitcoins to pay for the necessary equipment.

### **Bitcoin and Darknet**

Darknet is a hidden segment of the Internet which can only be accessed through a special browser and where users deliberately conceal data. The Darknet or deep web's content cannot be accessed through a traditional search engine such as Google, and their users purposely hide information while the software provides complete anonymity. You can trade every kind of illegal objects here, drugs, weapons, stolen data, but can even hire an assassin. Most payments are made with BTC since there is no country government behind this virtual currency, and when the Bitcoin is paired with TOR, the transaction is untraceable!

### **The Bitcoin and private security**

Based on the above, it may be contradicting to connect the Bitcoin with private security. However, I think it is necessary to talk about what we can do if this virtual currency is not used as a legal means of payment.

Many associate private security with guarding commercial units, securing sporting events, or having security guards around. But if you think a little more, you will realize that private

security is just the first step in the fight against cybercrime, one of the very first steps where investigating authorities cannot take any action against the variety of cyber attacks. If we want to separate the role of private and public security in the fight against this form of crime, then we could draw the sharp line where there are no victims in a new, illegal IT activity but there is a potential to harm the security of the society or the economy.

At the same time, we cannot forget about the attacks on IT systems, of which purpose is to conceal the data stored in that particular system, then the hackers only provide the unlocking code to the users after having them pay a certain amount (that is usually determined in Bitcoin).

The cyber attacks can manifest in:

- the violation of the confidentiality or authenticity of the documents stored on computers or IT devices;
- the illegal alteration of Internet sites;
- malware attacks (malware), viruses;
- Dos (Denial of Service) attacks, that is flooding websites thus making its services unavailable to their users;
- DDoS (Distributed Denial of Service), an attempt to make a machine or network resource unavailable to its intended users, such as to temporarily or indefinitely interrupt or suspend services of a host connected to the Internet<sup>6</sup>;
- data theft.

### **What are the potentials in private security?**

Let me first approach this matter from a different angle. Are the investigating authorities the only ones that can step up against internet criminals? Is it possible to fight cyber crimes only after they are committed?

We can conclude from the answers that from the moment the criminal act was committed, the authorities have the right to act. However, the experts who are trained in private security can provide significant assistance with their knowledge and experience in the field. They are the ones that see through the financial institutions' entire system, can detect and monitor potential vulnerability, various errors, existing or caused damages in the system, and can also warn about potential dangers and resolve the issues. Their task is not to uncover an already occurred illegal activity, but also to avert or reduce possible damages both for the bank sector and the clients.

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<sup>6</sup> [https://en.wikipedia.org/wiki/Denial-of-service\\_attack](https://en.wikipedia.org/wiki/Denial-of-service_attack) (downloaded on April 6, 2016)

The most important step would be to properly prepare the employees, provide ongoing control, and create an adequate IT security system and protection, and to train professionals who are not just experts in information technology but are leaders who understand the basics of IT security, auditing, network security and the legal framework.

The European Union is now stepping up more promptly against various IT crimes. Consequently, it has issued recommendations and publications regarding child abuse, online bullying, terror threat, online scams, emphasizing that the law enforcement authorities can only act with the involvement of the private sector. Therefore, it is very important that companies in the field of private security monitor the attacks on IT systems and take the necessary steps with respect to their own activities.

The tasks of private security in connection with the bitcoin and information security:

It is necessary to collect the cyber threats and make them accessible for stakeholders, especially the attacks that can cause any type of disturbance or damage in Hungary's operation.

In addition, it is essential that Hungary develops a good and efficient relationship with its law enforcement, national security and legislative bodies as the co-operation and communication between these organizations are basic tools for cyber defense and establishing cyber security.

In my opinion, it would be a crucial task of the private security to draw the attention of individuals in the private sector to the importance of preventing internet crimes, and preparing them for upcoming challenges.

### **The future of Bitcoin**

It would be very difficult to predict the future of this method of payment. On one hand, because of its lack of legal framework, we cannot foresee the way the legislators want to, if they want to, regulate the use of the virtual currency with regards to its social or economic effect. On the other hand, given the dynamic development of the Internet, one may wonder how long the Bitcoin is even going to exist or be replaced by another, newer digital currency.