

THE ADVANCE
OF BITCOIN AND
VIRTUAL PAYMENTS

BLOCKCHAIN TECHNOLOGY

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01

The year blockchain technology and Bitcoin take off?

Little is known about the advance in this technology, as with Bitcoin -its strongest virtual currency- which after a few months immersed in scams and irregularities, is now [recovering consumer confidence](#). 

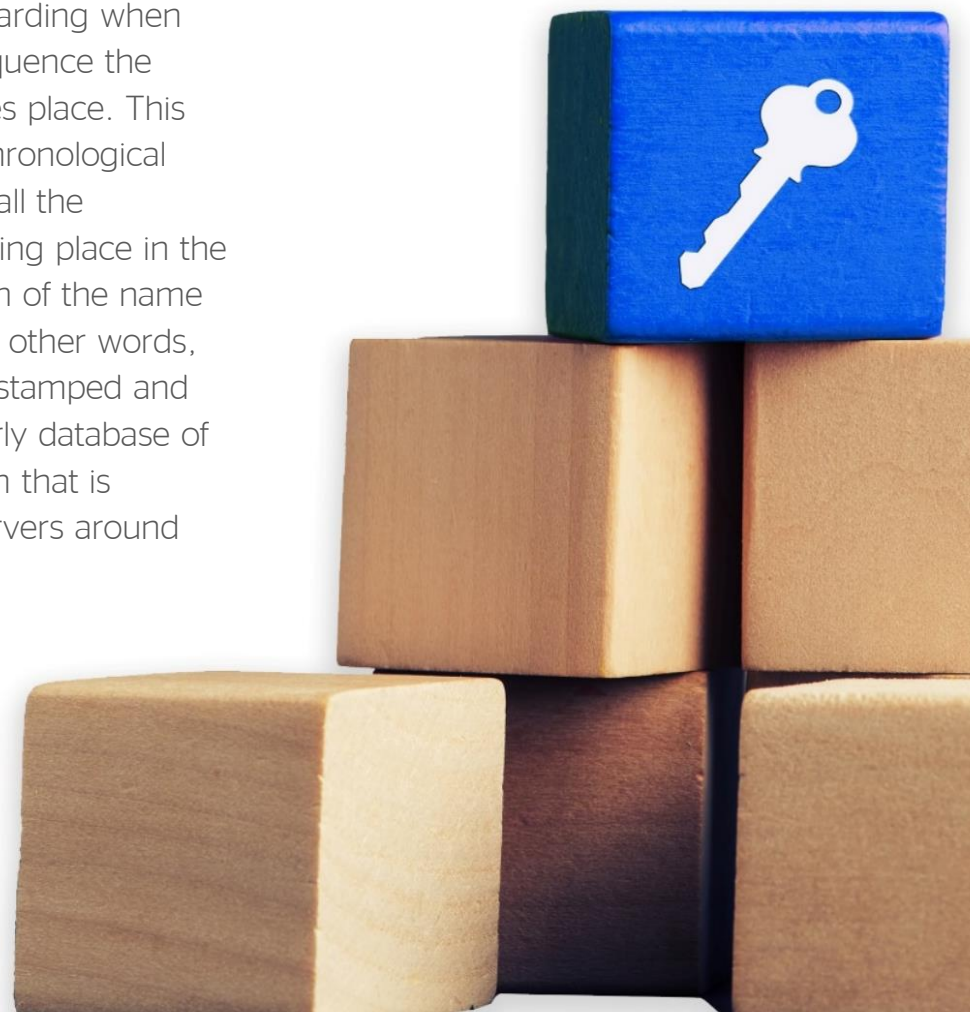


Bitcoin is the most famous and the strongest of the around 700 virtual currencies circulating on the Internet. Behind the currency lies the technology known as blockchain which –as defined by [BBVA Research](#), “is a peer-to-peer public accounting system maintained by means of a distributed network of computers which requires no central authority or third parties acting as intermediaries”.

This technology “consists of three fundamental

components: a transaction, a transaction register and a system that verifies and stores the transaction. The blocks are generated using open-code software and register information regarding when and in what sequence the transaction takes place. This “block” stores chronological information on all the transactions taking place in the chain –the origin of the name “blockchain”. In other words, blockchain is a stamped and immutable hourly database of each transaction that is replicated in servers around

the world. This technology is the basis of Bitcoin, a [cryptographic currency](#)”. [in](#)



The mysterious disappearance of Satoshi Nakamoto

What distinguishes “normal” transactions is that they do not require an intermediary or centralized entity, and therefore the risk of human error is reduced. People who buy Bitcoin on the Internet obtain an alphanumeric code – between 27 and 34 characters– which allows them to make payments to other people who have the electronic wallet. Bitcoin allows transactions between users via P2P, the exchange of information between equals, the same system used in the exchange of

music and film archives. In 2008, according to [Wikipedia](#), Satoshi Nakamoto published an [article](#) describing the Bitcoin. In January 2009 the P2P Bitcoin network came on line with the publication of the first customer, code, and the creation of the first Bitcoins. Curiously, [Satoshi Nakamoto today is on all journalists' most wanted lists](#). After writing the article that launched Bitcoin and exchanging mails on the virtual currency for two years with colleagues, in 2011 he disappeared. No one has ever seen his face or heard his voice, and it is not even known

whether his name is real or invented. A mystery about which much has been written, and which has even found its way into the world of comics ([Bitcoin, the hunt for Satoshi Nakamoto, by Alex Preukschat](#)).

Satoshi Nakamoto **was the first to “mine” Bitcoins**. Back to BBVA Research: “When people buy or sell Bitcoins, a secret code or token is sent to the system.

The "miners" use nodes, computers, or devices connected to a network to identify and validate the transaction, using copies of all or some of the blockchain information. Before the network accepts the transaction, the miners have to show a "proof-of-work" using a cryptographic hash function: a special algorithm designed to provide

high levels of protection. The miners receive some kind of remuneration for their contribution to computing power, thus avoiding the [need for a centralized system](#)". **f**


Since its creation in 2009 **the virtual currency has grown relentlessly**. It is estimated that investment in Bitcoin technologies is now worth

almost one billion dollars, and all the signs are that this figure will continue growing. And this investment comes not only from venture capital companies. Some of the financing rounds in 2016 are predicted to exceed 100 million dollars, according to the financial consultants [Magister Advisors](#).



02

Bitcoin: the good and bad sides

The virtual currency is making a comeback after a turbulent year. The International Monetary Fund is giving it a vote of confidence and the banking [sector is focusing on its development.](#) 



You can't mention Blockchain without mentioning Bitcoin. The virtual currency is the symbol of [blockchain technology](#) which aspires to change payment systems. Bitcoin has been at the center of scandals since was launched in 2009, although proof of the fact that it is becoming stronger can be found in the first statement by the International Monetary Fund about virtual currencies. The statement, made in January, says that "Virtual currencies and their technology can provide quicker and cheaper financial services which could become a powerful tool to take financial inclusion further in a developing world". Many people think that this is the time when Bitcoin is entering its mature phase after six-and-a-

half years surrounded by irregularities and some fraud cases. Even the founder [-who has disappeared, who is faceless whose name is even in doubt-](#) of the virtual currency has been nominated for the 2016 Nobel Prize in Economics.

He was nominated by American economist Bhagwan Chowdhry who says the following about the virtual currency founded by Satoshi Nakamoto: "Bitcoin, which exists purely as a mathematical object, offers many advantages over both physical and paper currencies. It is secure, relying on almost unbreakable cryptographic code. It bypasses governments, central banks and financial intermediaries such as Visa,

Mastercard, Paypal or commercial banks eliminating time [delays and transactions costs.](#)" [in](#)



Bhagwan Chowdhry also points out that “the consumers will be big beneficiaries and indeed the poor and marginal sections of the society will reap the benefits of financial and social inclusion”.

Bitcoin seems to be entering a **golden age after quite a few dark years**. When it was created, the banking sector was very wary of it, while rebellious geeks, cyber-anarchists and followers of the anti- globalization movement embraced the virtual currency. They saw it as an anti-system

way of competing with the capitalist model. It was also a way of laundering money or committing tax evasion...and this was evident in the fluctuations of the currency:

in January 2013 it cost 13 dollars, more than 1,000 dollars nine months later, before falling again to 300 dollars.



Support from Banks

The banking sector is currently supporting Blockchain technology. BBVA is part of the group of international banks that are looking at what this technology could bring to their business, and they have placed their trust in an American startup, R3, to develop applications using this technology in the financial sector.

This project currently includes around 30 global banks, including BBVA (which featured among the founders in September this year), Bank of America, Barclays, Goldman Sachs, HSBC, JP Morgan, Morgan Stanley, Société Générale, BNP Paribas, Canadian Imperial Bank of Commerce, ING, Commerzbank, UBS, and others.


Also at the beginning of 2015, BBVA invested in the largest wallet of virtual cryptocurrencies in the world, [Coinbase](#), which includes an exchange service that allows users to buy and sell and then.

Banks have arrived on the scene late, although they have come to realize the revolution that is coming. This revolution does not only affect payments. According to [BBVA Research](#): “the greatest of a public accounting system could go beyond payment systems. Because most financial assets, like bonds, securities, derivatives and loans are already electronic, **some day the whole system could be replaced by a decentralized structure**. In fact, the most recent innovations use tokens to store and market assets like securities, bonds, motor vehicles, houses and staple food commodities”.



"The so-called "colored coins" carry additional information about the asset, which generates a "smart property" or the ability to record and conduct transactions with these assets using "smart contracts" via complex algorithms through distributed


platforms without a centralized log, increasing their efficiency. In this regard, the current system in which financial institutions record individuals' accounts in a centralized database and banks' reserves are stored in the central bank (for example, the Federal

Reserve) would be replaced by the "Internet of money" or the "Internet of finance", [a fully decentralized financial system](#)". 



03/REPORT

The regulation of Bitcoin

There is a race to determine the rules of the virtual currency. But is it too soon? [the consultancy firm Deloitte wonders.](#) 





Bitcoin has captured the imagination of consumers and businesses around the world as one of the greatest advances in exchanging shares. Blockchain technology has been a major IT breakthrough that seems to solve what seemed unsolvable: ensuring that a digital transaction occurs only once. However, there is a fundamental question that looms over Bitcoin, which could slow the pace of innovation and its adoption, and that is what its regulation will be, as highlighted BY [this report by Deloitte](#).

There are three reasons, says the consultancy firm, why the authorities and regulators should consider delaying the regulation of Bitcoin, to give more time and freedom to blockchain to explore its full potential. Deloitte emphasizes the following points:

- 1. Bitcoin is still very small** compared to traditional transaction systems Bitcoin receives considerable attention and scrutiny from politicians and regulators, far beyond what its current size and its impact on the market seem to justify.

Currently, **the total global value of Bitcoins** is less than **US\$ 4 billion**, which pales in comparison to the nearly US\$ 1.36 trillion in circulation. Similarly, the penetration of Bitcoin in the market as a method of payment is almost nil. With the power of the Internet, it's true that many Americans have heard of Bitcoin, but very few have bitcoins or used them for a transaction. Many of those few users are just experimenting with the new technology, and not necessarily as a method of payment for goods and services.

Moreover, while it's true that **venture capital investments with bitcoins in startups have increased** a lot in the last year

(US\$700 million since 2014), we are far from actual products that could generate a real

demand for bitcoins related with services to the general public.



2. Other key innovations had more time to develop

before being regulated.

Looking back history of innovation, other technologies that have transformed our society had more time to develop before being seriously regulated. Some notable examples are the following:

- Phone: invented in 1876, regulated in 1913 (37 years later).

- Aircrafts: invented in 1903, regulated in 1938 (35 years later).

- Radio: invented in 1907, regulated in 1927 (20 years later).

- Cell phones: invented in 1965, the first FCC wireless spectrum bidding process focused on mobile data in 1989 (24 years later).

- Internet: invented in 1969, it has only become an area with intense regulatory focus in recent years, nearly 46 years after its development.

The open code software program that is Bitcoin was first launched in 2009. It has only been six years since Bitcoin was developed that is very far from the time in which other technologies were adopted [by the general public in the past.](#) **f**





3. Other, more valuable and important, possible uses of Bitcoin have still to be invented.

Bitcoin a breakthrough that could potentially transform and improve the way the public around the world carries out financial and non-financial transactions. **However, it is much more than digital money.** More broadly, the protocol capacity of Bitcoin to give confidence to parties that

do not know each other could change the way people live and interact.

The list of cases in which Bitcoin and blockchain can potentially be used is growing every day, and although it is in its infancy, some of its emerging uses are very interesting. From allowing more efficient banking networks to providing the application that will promote

banking services to the billions of people living in the Third World, they are great ideas.

Like others before it, it is likely that Bitcoin will move from one innovation to another, and finally develop products, services and capabilities previously unimaginable that will become needs in our daily lives.

Considerations for policy makers and regulators

Deloitte argues that Bitcoin was consciously designed to be a source of digital currency and open public accounting, beyond the control of any government or company. At least on the surface, it looks like Bitcoin and blockchain have solved a major problem by allowing trade to evolve through the Internet, i.e. by making it possible to carry out publicly-verifiable transactions without having to exchange increasingly- vulnerable personal financial information. It's a bold experiment.

As Bitcoin aims to change something so fundamental to

our economy and, ultimately, so important to our personal lives, it may indeed cause some fear. However, in seeking to protect the public from misuse, **could policy makers and regulators not eventually drown from the possible capabilities** that could potentially change our life for the better? In many ways it is the classic challenge that policy makers and regulators always face: how to react to something that is so different to what existed before?

It's a difficult dilemma, but the actual market can provide the best **guidance on when and how regulators should step in**. On the one hand, innovations

are massively adopted only if they are useful and create value, and most of the time their greatest value appears in ways never imagined before and we did not know we wanted or needed.

On the other hand, if a new technology cannot reach the critical masses, it often disappears as suddenly as it appeared. The same can happen to Bitcoin. It's like the "chicken and egg", i.e. will the adoption of Bitcoin and blockchain drive the pace of regulation, or will the regulation help to achieve wider adoption?



What the future holds remains to be seen, but some important questions remain, as with the Internet. Must the United States provide the enabling environment for the incubation and maturation of Bitcoin-related innovation? Or should we wait and see the attitude of others and let them capture most of the new value, which

could be important in the coming years? Given the potential of this technology to disrupt both financial services and technology industries, it is desirable that industry groups as well as policy makers and regulators encourage collaboration and dialog at national level, the consultancy firm concludes.



04

R3: The banking sector's support for blockchain technology

The New York startup -involving participation by some 30 banks- is testing blockchain technology in [its interbank transactions](#). 

The [US startup R3 CEV](#) has made a preliminary test of interbank [transfers using blockchain technology](#) blockchain, according to Business Insider. R3 thus becomes the first collaborative “laboratory” for developing these trials, **and constitutes a milestone for the development of blockchain**

.The test focused mainly on interbank transactions. The participating banks simulated the exchange of shares in order to explore the blockchain potential for instant global transfers without the need for an intermediary.

R3 used the Ethereum and Microsoft Azure technology, a cloud computing platform. Eleven banks took part in the

project, among them Barclays, Commonwealth Bank of Australia, TD Bank and Wells Fargo. BI Intelligence predicted that in 2016 blockchain technology would be applied to interbank transfers, and the first R3 test marks an important step in that direction.

As reported in this article from [the Financial Times published in the newspaper Expansión](#): “Blockchain has been hailed by admirers as holding the revolutionary promise that the internet did two decades ago. Business figures from Microsoft’s Bill Gates to Richard Branson have extolled its potential”. And it underlines that after the mistrust caused by the early scandals “almost

every big **financial services institution has now overcome that initial suspicion**. And the technology has swung from being a weapon wielded against banks to being heralded as their ultimate back-office makeover, a bitter blow to the libertarians who conceived the idea of the blockchain to circumvent the global banking system. Suits are replacing hoodies and ripped jeans at blockchain conferences”, says Mark Buitenhok, head of transaction services at Dutch bank ING.

According to the British newspaper, the technology is already handling a considerable volume of business.

On **a normal day over 120,000 transactions** are made through the bitcoin blockchain with a total value of 75 million dollars, according to blockchain.info. The register now has 38,000 blocks and almost 45 gigabytes of information.

Banks are focusing on online channels

The banking sector is clearly committed to blockchain technology. It is worth noting that the shift from banking branches to online channels and mobile devices has been one of the dominant issues

for large banks in the last quarter of 2015, according to [Business Insider](http://BusinessInsider). Today banks are continuing to cut back on staff numbers in their branches: JP Morgan, for example reduced its workforce by 12,000 employees in 2015 (a reduction of 43,000 jobs since 2012), and it is estimated that Citibank plans to close as many as 50 branches in the first quarter of 2016, opting to focus on its six most active markets.

There is no doubt that digital banking is still growing at a good rate: JP Morgan itself heads the market with almost 23 million online banking users, up 20% over the previous year.



Wells Fargo now has 16.2 million users, after having followed a practically horizontal trend between the second and third quarters of 2015. And finally, Bank of America today has 18.7 million online banking users, up 13% over the previous year. In fact, 15% of bank deposits were made via cellphone, representing a growth of three points over the previous year.

Digital banking is becoming one of the big banks' most important tools for attracting and creating loyalty among their customers.

The mobile banking market is close to saturation. Although the number of digital banking users of the three main banks in the US continues to grow, it is doing so at a slower rate than before. As a result, banks are starting to use digital tools to create lasting relationships with their customers. For example, Wells Fargo is investing in products and services that increase convenience for consumers while improving their customer service, building long-term relationships with the users “for a lifetime”. Citibank also wants to build deeper [relationships with its customers.](#) [in](#)





If they want to move forward in that direction, banks will almost certainly have to build more and ever more complex digital services; in other words, once the vast majority of banks offer "mobile banking", it will become

essential to **offer exclusive services that set them apart from the competition and also help build loyalty among their customers**. One example is Bank of America, which began offering the chance to book appointments

through its app. This type of services which contribute an important added value will gradually evolve in the future, in fields such [as consulting or loans](#). **f**

05/VIDEO

Bitcoin y cryptocurrency

Discover all the possibilities that the rise of bitcoin and cryptocurrency entails. We explain how they work in this video.

[VIDEO](#)



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