**¿WHAT IS BLOCKCHAIN TECHNOLOGY?**

The Blockchain system appeared in 2009 with the Bitcoin Virtual Currency, is a register of digital transactions based on a gigantic database in which all the financial operations made with the electronic currency are entered and registered.

1. ***WHAT IS BLOCKCHAIN***

**The Blockchain (or chain of blocks) is a shared database that works like a book for the registry of transactions of purchase-sale or any other trade. It is the technological basis of the operation of bitcoin, for example. It consists of a set of notes that are in a shared database online in which codes register processes, quantities, data, and participants.**

**When using cryptographic keys and being distributed by many computers (people), it has advantages in security against manipulations and frauds. A modification in one of the copies would not do anything, but you have to make the change in all the copies because the base is open and public.**

**All the blocks that make up the chain have a hash (numeric password) of the previous block, the blocks are ordered in the chain in chronological order. Thanks to that hash all blocks are referenced by the block that created them, so only blocks containing a valid hash are introduced in the chain and replicated to all nodes. Thanks to this system it is practically impossible to modify a block that has been during the chain for a specific time.**

**The "mining" nodes are responsible for creating the blocks that make up the chain, adding to each of them the corresponding hash and all the new transactions that have been introduced in the network.**

**In this way, we can say that the blockchain allows us to keep an "accounting" published in a completely transparent idea of all the transactions of the network, without almost possibility of fraud, congestion, or loss of data and traceable.**

1. ***RELATIONSHIP OF THE BLOCKCHAIN WITH THE FINANCIAL WORLD***

The blockchain is a method to record data, a kind of Excel file. But it is shared: there are copies on the Web and on the computers of each participant in the creation and modification of that data, which can not be accessed by anyone without permission and in which information cannot be deleted, only adding new records. That allows the community to be responsible for protecting the data it contains, warning of possible mismatches derived from each update. Thanks to this, the integrity of the document is preserved.

The way in which the blockchain works allows all the participants to know the movements and changes that have been made in the document, as well as its author. By being based on mathematical operations, the blockchain is so far one of the safest methods that exist to create, modify, share and store information, so it could be applied to any field that needs to perform any of these actions, especially if in them they have multiple users involved.

1. ***BLOCKCHAIN BEYOND ECONOMY***

Although the chain of blocks is intimately related to Cryptocurrencies , it is logical to ask if this system would be valid for other types of transactions, and the answer is a resounding yes.

Below we will see several examples of the current use of blockchain, in areas other than those related to the economy.

**R3 Consortium:** the very financial entities that many are trying to replace with bitcoin or Ethereum have created the R3 consortium to find out how to take advantage of the blockchain in traditional financial systems. One of the first problems of the application of this scheme is the anonymity that the design of the blockchain provides. Something that has been solved with the so-called "authorized ledger," a very peculiar variant of the bitcoin blockchain, for example, that does identify users that add blocks, and that makes certain parties can only access system transactions.

**Registration of properties:** The Japanese government has initiated a project to unify the whole register of urban and rural properties with blockchain technology, which would allow having an open database in which the data of the 230 million could be consulted of farms and 50 million buildings that are estimated to exist in the Asian country. In Dubai, they are planning something very similar.

**Payments in the real world**: A startup called TenX has created a prepaid card that can be reloaded with different cryptocurrencies and then pay with it anywhere as if that card had conventional money, regardless of whether that establishment accepts or not this type of coins virtual.

Centra, another company with its own project, has also created cards to adapt the crypto, to the conventional payment of the system in which we live.

**Carsharing:** the company EY, subsidiary of Ernst & Young Global Ltd is developing a system based on the chain of blocks that allows organizations or groups of people to access a service to share cars easily. The so-called Tesseract would allow registering who owns the vehicle, the user of that vehicle and generate costs based on insurance and other transactions in this type of service.

**Cloud storage:** storage services are usually centralized in a specific provider, but Storj wants to decentralize this service to improve security and reduce dependence on that storage provider.

**Digital identity:** the last and gigantic security failures and data thefts have made the management of our identities become a genuine problem. The chain of blocks could provide a unique system to validate identities in an irrefutable, secure and immutable way. There are many companies developing services in this field, and all of them believe that applying chain block technology for this purpose is an optimal solution.

**Music**: although there are critics who affirm that this option does not have validity, some claim that the music distribution could undergo a revolution if a system based on the chain of blocks were managed to manage its reproduction, distribution, and enjoyment. The so Spotify is betting heavily on its chain of blocks.

**Public/government services:** another of the most exciting areas of application of the blockchain is in public services that could boast an absolute transparency. The areas of activity are multiple: from the management of licenses, transactions, events, movement of resources and payments, property management to identity management. In fact, the massive theft of data in Equifax has led some to propose the replacement of social security numbers in the United States with a system based on the chain of blocks. There are even initiatives to "decentralize government," and Bitnation is one of those projects that try to call us becoming "citizens of the world."

**Social security and health:** although it could be included within the aforementioned public services, public health could undergo a real revolution with a chain of blocks system that would serve to record all types of medical records and solve one of the classic problems of management of health.

**Management of authorship:** although related to what is mentioned for the world of music, Ascribe is a platform that tries to help creators and artists to attribute the origin of their works through the chain of blocks. There are many other platforms in this field (Bitproof, Blockai, Stampery, for example) that, among other things, allow you to generate stores in which you can buy original works safely and simply.

These are just some examples of the Blockchain application, for different areas of business and application in the world in which we live.

But seeing the results, it becomes difficult, in the medium term, to think that the blockchain will not be in most aspects of our daily life.