

More than an innovative technology: the potential and evolution of blockchain



The growth and survival of a business today depends increasingly on a strong blockchain strategy. This is because many organizations already understand their value is not only found in the management of crypto assets or in the new ways of interacting with money, but also in changing the ways of managing business and many aspects of our daily lives, thanks to its constant evolution. How does it impact the management and innovation capacity of companies and start-ups?

As we said in previous issues, blockchain is the most important and disruptive technological innovation of recent times and it is revolutionizing the way we do business worldwide. Today companies are implementing this technology in place of slow and expensive analog methods.

So much so that, according to Globant's Sentinel Report 'Blockchain: A Game Changer for All Industries', this year the blockchain market was valued at 4.9 billion dollars in 2021 and could reach 67.4 billion by 2026. This represents a growth of almost 70% in five years.

According to Avijeet Dutta, Globant's Director of Technology at the Data and AI Studio, "everyone has an interest in understanding the potential of blockchain. There is no industry that is not affected by it." And companies know it. Gradually they are discovering the multiple benefits of blockchain such as improving the efficiency of transactional processes, tracking inventories or guaranteeing the authenticity of a product thanks to the transparency, immutability, scalability, security and efficiency offered by this technology.

Furthermore, it also provides greater profitability, productivity and even better efficiency. This obliges companies to be competitive and reconsider their business models to move toward a fully decentralized economy.

But, as always happens in the sphere of technology, its evolution is continuous and new advantages and functionalities are constantly emerging. That is why organizations have to intensify their efforts in research, investment and development so they are not left behind. The secret lies in always being aware of changes and having the ability to anticipate. And a great



deal of that anticipation involves allocating budget and resources to meet the costs associated with digital transformation.

From blockchain 1.0 to 3.0

As is commonly known, it all started with Bitcoin which is nothing more than a distributed ledger technology. The first blockchain application was used to record financial transactions of Bitcoins. By providing transparency, responsibility, immutability and security, this technology triggered a large influx of cryptocurrencies and today there are more than 2,000 in circulation. It became so popular that today there are already countless companies and consumers that accept and use digital payments with crypto technology. In other words, a new paradigm of financial disintermediation was created for payments and transfers taking advantage of the creation of these new digital assets that are cryptocurrencies.

Thanks to the foundations that Bitcoin laid, the blockchain was able to evolve and have more uses. And so it was that Ethereum appeared on the scene and with it, the era of blockchain 2.0. This technology has several innovations but the one that stands out the most is the introduction of Smart contracts.

These intelligent contracts are implemented by an immutable set of rules agreed before their initiation. These are encoded on the Ethereum blockchain which guarantees that no one can modify them once the contract begins and eliminates the need for a middleman. The contract will be executed when both parties fulfil their part of the agreement.

Although this Smart technology reduces costs and increases the speed of transaction verifications on the network, it fell short on the number of transactions being processed. Another major limitation was its lack of scalability. That is,



the network's capacity to adapt to an ever-increasing use. Therefore, what the new era of blockchain is seeking, is not so much to find more utilities, but rather to try to perfect Ethereum's advances while solving its main shortcomings.

In short, blockchain 2.0 consolidates a new digital economy model that cannot be stopped and that drives a major paradigm shift.

And since technology is so dynamic and so surpassing, blockchain 3.0 appeared with the aspiration to exceed the processing capacity of the traditional economic system that networks like PayPal or Visa have. The other disruptive aspect is its interoperability, which implies the network's ability to be compatible with other blockchain protocols. This way, a user could exchange data (cryptocurrencies, NFT or any other token) between two different blockchains without any intermediary.

Blockchain 3.0 has also focused on the rise of dApps (decentralized applications). These dApps support various cases of powerful use such as Defi platforms, crypto lending platforms, NFT markets, P2P lending and others.

Blockchain 4.0

In the same way that in the past the steam engine or the internet triggered industrial revolutions, World Bank experts argue that blockchain is driving a fourth revolution.

Blockchain 4.0 is expected to allow the physical and virtual worlds to fuse into decentralized, transparent, verifiable (tamper-proof) and automated intelligent cyber-physical systems.

When combined with technologies such as IoT, AI, AR and VR, it will create smarter solutions for all types of industries and areas. And so, the commercial possibilities



will be more viable, faster and more profitable. More than just automated record keeping, blockchain 4.0 will provide businesses with more secure self-registration applications based on decentralized, reliable and encrypted ledgers.

This 4.0 ecosystem can provide an integrated development environment (IDE) for developing interoperable cross-blockchain dApps that can run on multiple level 4.0 blockchains using advanced APIs.

However, just like any other digital transformation, the blockchain journey for any company is a multi-phase process that begins with an analysis of the technical/business, consulting, concept development, smart contract development, front-end and back-end development, implementation and maintenance needs.

How blockchain can boost your business

The financial sector was the first to pay attention to the possibili-

ties of this new technology. In fact, it came to represent about 30% of the blockchain market value. And this is no coincidence as financial companies were able to tokenize their assets more effectively while being able to make conventional property transfers more quickly and economically. This way, they provide enough transparency so that customers can track every stage of the transaction they are involved in.

But they are not the only beneficiary. This technology simplifies and empowers the business of any industry. Its impact is massive.

For example, in the case of retail, it provides a better customer experience while providing greater security and privacy to consumers, both online and in person. Blockchain technology can also be used to check the inventory, automate back-office management with smart contracts, optimize customer databases and monitor ownership with a supply chain management system.

Another major contribution of the blockchain is that the consumer can verify the quality of a product from start to finish, from raw material acquisition to product arrival. This product traceability also increases consumer awareness of the environmental impact of the product, allowing clients to select honest and transparent suppliers based on factual information.

The blockchain also allows different loyalty programs to connect between several brands by accumulating generic loyalty rewards within a single wallet. The points can then be redeemed with any company in the program. This way, customers are able to store money in a digital wallet which can be redeemed at any time.

As for the supply chain, thanks to this technology, better business

and operational decisions can be made. A well-planned integration of processes reduces the risks of disruptive scenarios, such as an increase in product recalls, resulting in organizations efficiently handling events that dramatically change supply and demand.

In addition, blockchain can help to record relevant information in order to manage the supply chain more effectively, increasing traceability and reducing counterfeit losses. It also improves visibility and compliance. This way, it increases the organization's performance as a leader in responsible manufacturing.

The *IDC FutureScape: Worldwide Blockchain 2021 Predictions* (Oct 2020) predicts that by 2025, 17% of logistics industry organizations will partner with a service company to integrate blockchain with IoT platforms to record the data exchanged between M2M communications. These two technologies combined simplify removal processes and preventive action by measuring, for example, temperature, humidity, vibration levels and even packaging conditions through image recognition.

Benefits and opportunities for startups

One of the typical ways startups use blockchains is for payments and money transfers. This also includes transactions that are made between different countries, as cryptocurrencies greatly reduce the transfer fees of the traditional system. This opens the door to suppliers from different countries and thus access products and services of better quality and at a lower cost.

Another important benefit is the ability to store company information in the cloud in a decentralized

manner without the need to pay for the maintenance or the updating of a server; and better still, in an extremely secure way. Its decentralized nature makes it impossible for hackers to change data without alerting the entire network, as the distributed system cannot be manipulated by a single entity. This protects against corruption and gives control back to real users.

In the same vein, companies can use this technology to manage problems with authentication and data reconciliation. In fact, it provides the possibility of creating encrypted digital identities that exchange usernames and PIN codes for extensive security features that can protect organizations and their customers.

As Pablo Lipstein, Business Developer of Globant Blockchain Studio, says, "the first step to understanding blockchain is to see it as a tool for change with multi-purpose suitability for improving the efficiency of processes that empower people, industries and companies."

It is fundamental for both established companies and startups to understand their own digital transformation journey and accompany the evolution of this technology to take their organizations into the future. ▽