

## DOCUMENT MANAGEMENT IN TIMES OF BLOCKCHAIN

Every day, thousands of documents are handled by employees and processed, mostly in digital format, others some still on paper. We are referring to invoices, contracts, delivery notes, payrolls, payment receipts, purchase receipts, financial reports and a long etcetera of heterogeneous information and not always easy to catalogue.

Not for nothing, **document flows are one of the major headaches for organizations** nowadays. The current models do not always allow us to detect duplicate information (so we can find two workers using the same file at the same time, with different versions), which leads to a massive disorganization that puts at risk the security of the data (employees misplacing documents is a constant, something extremely relevant after the entry into force of the GDPR); in addition, it is damaging to the productivity of a company.

A generalized chaos which has turned to digitalization to find a solution to all these intrinsic problems. For this reason, more and more companies been incorporating document management solutions that allow them to automate a large part of the work processes. These programs range from the recognition of the documents itself (mainly through OCR technologies) to their classification and processing (using artificial intelligence algorithms that understand the content of the file and its relationship with established internal procedures), guaranteeing at all times the integrity of the information and the security of the data.

### **BLOCKCHAIN FOR DOCUMENT MANAGEMENT**

The outcome of these struggles is an innovation that promises to change the way we understand document management forever: **blockchain**. These chains of blocks, initially linked to the exchange of cryptocurrencies such as bitcoin, are today a commercial alternative for any environment where it is required to transmit sensitive information in a completely secure and unalterable manner. For example, **it is already used in financial contexts** (as several banks are already testing in order to ensure the integrity of economic transactions) **in transport** (for example, using blockchain to register and certify the drivers' medical examinations and qualifications) **or**

**in food and logistics** (as Wal-Mart is going to guarantee full traceability of food and speed up the detection of any anomaly that endangers human health).

In the case of document flows in companies, blockchain assures something similar. It's about **using these distributed networks of equipment** (either anonymously on a global scale or in a private, bounded network) **to verify and validate all the documents entering and leaving our organization.**

In a file system based on blockchain, we can **instantly verify the location of a particular document, who created it and when it was last modified, detecting any attempt to manipulate it.** This is possible thanks to a unique fingerprint for each element that we introduce in the chain (an ID generated by algorithms) that allows us to identify each file within our perimeter of action. This information is also accesible to any partner of the organization authorized to do so – which provides maximum transparency in document processes – and we will also be able to obtain the relevant approvals established in our work processes.

On the other hand, **it avoids the classic problem of duplications** and the use of different versions of the same file, since as soon as a person modifies the file, the system will automatically register this update so that no misunderstanding occurs in the management of different files.

Among all the documentary possibilities offered by the blockchain, one of the most interesting for companies is the smart contract. In these cases, we are facing digital contracts that include a linear sequence of actions where each one of them enables the following one. This means that there is no need for an intermediary – read notary or similar – to certify the compliance with certain commitments between two companies or between the company and an individual: with blockchain, the system itself prevents any of the parties from altering or taking advantage of the document in question. On the other side of the coin, the Public Administration can use the blockchain to ensure the integrity of public tenders without having to assume the documentary custody of the bids presented, something in which the government of Aragon, among others, is already immersed.

Among these barriers we find the fear inherent in many critical sectors that their information will leave the company's security perimeter, which is practically inevitable in the case of public networks, but easily solved if we opt for private or licensed networks. All this without forgetting that blockchain is a technology which is still consolidating, without common standards or interoperability capacity between different blockchains, which is gradually overcoming initial obstacles by reducing its cost and gaining efficiency compared to transactional models to use (due to the energy consumption of the first networks that emerged in the market, such as the one that supports bitcoin).