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Blockchain and the Construction Industry: Hype or an Industry Innovation? (<https://esub.com/blockchain-and-the-construction-industry-hype-or-an-industry-innovation/>)



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Over the past several months, blockchains and block-chaining have made international news. Block-chaining is used in cryptocurrency or digital currency. Currently, the healthcare industry (<https://www.ibm.com/blogs/blockchain/category/blockchain-in-healthcare/>) is looking into ways to use block-chaining in the access and creation of healthcare records. Blockchain and the construction industry are natural partners in this technological revolution.

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What is a Blockchain?

A blockchain (<https://www.blockchain.com/>) is a digital ledger that stores transaction data chronologically and publically. Each transaction is a block, with each new transaction the block is added to other blocks. This creates a chain of blocks. It was first introduced with bitcoin. One of the benefits of block-chaining is that it, in theory, prevents fraud or misrepresentation of the numbers. Any changes to an original block require that change to pass inspection by all other blocks on the chain. And any changes are made through the addition of a block.

People hold wallets, which are basically accounts. Money can be moved from one wallet to another, which adds an additional block.

Cryptocurrencies and potentially any data on a blockchain is encrypted. This means that any changes that are made require complex math problems to be solved to make changes. The problems increase in difficulty the longer the chain and are very taxing on computers. However, this is what keeps them safe. This is why blockchain and the construction industry would be able to benefit from each other.

Where Blockchain Fits in Construction?



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Projects typically involve an owner, the architect, engineers, a general contractor, subcontractors, and suppliers. The owner holds contracts with some of the participants, but not all. Businesses like the subcontractors (<https://esub.com/how-to-navigate-a-time-and-materials-construction-contract-for-your-next-project/>) and suppliers will hold contracts with the general contractor rather than with the owner.

With block-chaining, the owner would have a project wallet. The project funds can be stored in this wallet which is used to pay everyone who works on the project. Payments can be tied to steps, so when one step of the project is completed and inspected the payment would automatically transfer to the appropriate person. It would streamline all payments and processing into the product delivery. And with payments tied directly to work, it would be hard to deny payment.

How Blockchain and the Construction Industry Would Work Together

The process of blockchain and the construction industry would boil down to roughly four steps: project modeling, smart contracts, inspection, and delivery. The first step in creating a project is modeling. Project modeling would show what the final project will look like,

and it sets forth a clear path of what needs to be accomplished. Once this is complete, the smart contracts could be drawn up.



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uld be created, and individual blocks would be linked with payments to each step of the project model. This helps create the budget. It also helps with accountability. Funds are technically available since the money has been set aside for each step. This provides assurances for anyone working on the project that they will be paid.

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Once contractors complete the steps required, they have to submit for evaluation. An inspector would inspect the work, as they do currently, and approve or deny the work. If the work has been approved funding would be released, and people would be paid. In a way, it helps carefully draw up any and all responsibilities. Since payments to contractors would be dependent upon the step, it would help establish liability and prove who needs to be paid.

Subcontractors or contractors would draw up a similar process for materials, slowly releasing funds. The first installment would be for the receipt and agreement on supplies. Another payment could be made when the supplies are loaded into shipping. With final payment when the supplies make it to the site in working order.

Final Thoughts

Blockchain and the construction industry is a natural pairing since there are clear deliverables. By spreading the data out to several companies and computers, it makes all payments clear and helps hold different parties accountable. It also can create saved ids (identifications) which would help many subcontractors win more work. While block-chaining is new, it's showing real progress, and newer iterations require less energy and are less intensive while keeping the same level of safety. It won't be long until it's used not just in construction, but healthcare, all finance, and more.