CONSTRUCTION - USA

Blockchain and smart contracts could solve unsolvable construction problem

09 September 2019 | Contributed by Kilpatrick Townsend & Stockton LLP

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Lien wavers

Every construction project, from contract negotiation through the payment of the final pay application, suffers from the same conundrum born out of every parties' desire for certainty and finality. That problem is the issue of the exchange of lien waivers for payment. The issue is those parties lower in the construction chain are asked to provide unconditional lien waivers (swearing that they have already been paid) as part of their request to be paid. This happens all the way up the chain until you reach the top. It is borne out of the project financer's desire to make sure that when they issue a progress or final draw on funding that they are achieving finality on costs of construction for everything that transpired prior to that draw. This, of course, helps insure that their investment in the project is not attacked by mechanics and materialmen's liens filed by unpaid subcontractors and suppliers down the chain. (While the financiers typically have a superior priority in the property, the financiers would rather that the borrower occupy the property and pay them back in accordance with the repayment schedule, than to foreclose, fight over priority, and suffer loss from an insufficient recovery on foreclosure or to have to hold the property for some extended period of time.)

Potential solutions

Several states have passed laws, and in other places, parties negotiate the exchange of a conditional release in exchange for a check, which would be followed up, in theory, with an unconditional release when the check is honored by the payor bank and becomes "good funds." A conditional release is a compromise position that is sometimes rejected and it has its own problems. Rather than relying on a single executed document, a party would need to also have proof of the funding of the check in order to know whether it may rely on the conditional release or not. This need to look to external sources is less than ideal from the finance side.

There are other imperfect solutions to this problem up until blockchain and smart contracts, which may be the perfect solution. One solution was to have the prime contractor prepay its subcontractors prior to submitting what essentially would be a request for reimbursement from the Owner for what was already spent. The subcontractors, as a precondition to receiving that payment, would have already had to prepay their lower tiered subcontractors and suppliers. In theory, that solution works. In practice, it fails. The reason it fails is that the parties with the least financial wherewithal are asked to prefund a significant payment and hope for a timely reimbursement. The larger the project, and the higher the monthly burn rate on expenditures, the more unlikely you are to succeed in this pre-payment paradigm.

Another solution, which is even more impractical in practice, is for every party on the construction project who is expected to receive a portion of a particular monthly draw to assemble in a large conference room and exchange cash for unconditional releases in an elaborate closing ceremony, each and every month. This would permit the exchange of hard currency for unconditional releases, seemingly satisfying the finance side's desire for finality and certainty, as well as the working side's desire to make sure they do not end up financing the project themselves. There are obvious problems with this scenario, including the logistics and time necessary to perform it, and the security risks. Through the use of blockchain, however, the parties can accomplish the same thing electronically.

Blockchain and smart contracts: the perfect solution?

What are blockchain and smart contracts? Blockchain is a cryptographic technique to validate transactions for each transaction so that there is trust in what transpired at any given moment, because the algorithm is so strong. A distributed ledger (it exists in multiple locations) for the blockchain provides an unhackable solution, as many parties possess a copy, and it would be impractical to hack all of them to change the ledger. Some blockchains integrate smart contract capability that uses software code to automatically enforce one or more contract terms before the underlying transaction takes effect. A smart contract could be used in conjunction with, or to replace, project management/finance software to set up rules for the execution of a transaction or series of transactions. This can provide enhanced visibility or other functionality in a secured way with a distributed ledger and algorithmic security. Since many possess a copy of the blockchain and understand the underlying rules of the smart contract, there are no secrets and no chance at manipulation.

How would this work to solve the problem discussed above, is as follows. Using software with controlled access to the blockchain, the parties participating on the construction project would register and be invited into the project finance database. Parties lower in the chain could upload their unconditional releases, which the system would hold in escrow. The project financier (owner or lender) would pre-load the draw payment on its end either just prior to funding or before the next month of work began, so that the parties performing work could be assured that payment was locked in the system. Once the system received all of the unconditional releases required for the draw, the funding would happen through some combination of the smart contract or traditional software to enforce the rules so that the blockchain records the compliance with a perfect audit trail. The payment would not just flow from the bank to the owner. The entire distribution could simultaneously occur, with the payment simultaneously flowing throughout the entire matrix of those expecting payment. The suppliers and subcontractors would be paid at the same instance the draw was funded to the general contractor. The blockchain would be used to securely track and distribute the funding, as all parties can be assured the prerequisite conditions for proceeding were met. Because of its distributed ledger system, there would not be the ability of one party to manipulate the system. The releases could be created through the software system or smart contracts so that a party could not simply upload a blank page to trick the system. There would still need to be human oversight in determining who should be a participant in payment system, as well as validation of whether work was performed, and at what percent of completion. As this approach catches on over time, anyone who supplies or provides labor to a project would know to register on the project to secure its payment.

Comment

Certainly there are still "What ifs..." to be worked through on a per project basis, but the fundamental problem has been solved with technology that is secure, unhackable, transparent, and lightning fast.

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