

**WHITE PAPER**

**THE ADVANTAGES OF USING A WEB PAYMENTS PLATFORM IN THE  
CONSTRUCTION INDUSTRY BASED ON SMART CONTRACTS  
AND CRYPTOCURRENCIES**

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1st Draft

## **INTRODUCTION TO THE PROBLEM**

In 2011, five NSW tier 2 construction companies became insolvent leaving more than \$1 Billion in unsettled claims. Their failure had a knock-on effect on a large numbers of subcontractors, who despite having fulfilled their contractual obligations, were not paid and led into bankruptcy due to reasons beyond their control.

Payment security was the source of the problem.

Uncertainties relative to payments have been highlighted as a cause of business failures and escalating disputes for many years within the construction industry, but this problem has never been properly resolved by the current Australian legislation.

The Building and Construction Industry Security of Payment Act, enacted eleven years earlier to protect subcontractors, suppliers and alike, could not prevent the chain of insolvencies that took place in 2001. Even today, most companies operating in the construction industry still struggle to be paid on time.

In Australia the construction industry accounts for 7% of GDP. Around 10% of the working force are directly or indirectly related to the construction industry and yet, although the legislation exists, Australia doesn't have an effective payment system capable of protecting subcontractors from insolvency of a head contractor.

## **OUR SOLUTION TO THE PROBLEM**

We propose the creation of a web payments platform to process *progress claims* using smart contracts technology and cryptocurrencies.

Smart contracts have several advantages when compared to traditional paper contracts. Smart contracts are:

1. Self-enforceable, or self executable;
2. Interconnected - meaning that smart contracts are able to *communicate* among each other.

Cryptocurrencies are what we like to call “smart money”, since instructions can be incorporated into cash transactions.

For example, when A pays B, instructions can be embedded in the transaction so that a specific sum follows through to pay C. B has no other option than to pay C, as the funds will not be available unless the instructions are fulfilled.

We believe that using smart contracts and cryptocurrencies in the construction industry will be beneficial to subcontractors down the supply chain, as web payments platform will protect their often fine margins, obviate the need for unnecessary borrowing and can lead to a much more balanced trading environment, hence supporting growth, which ultimately feed back into benefits for the principal.

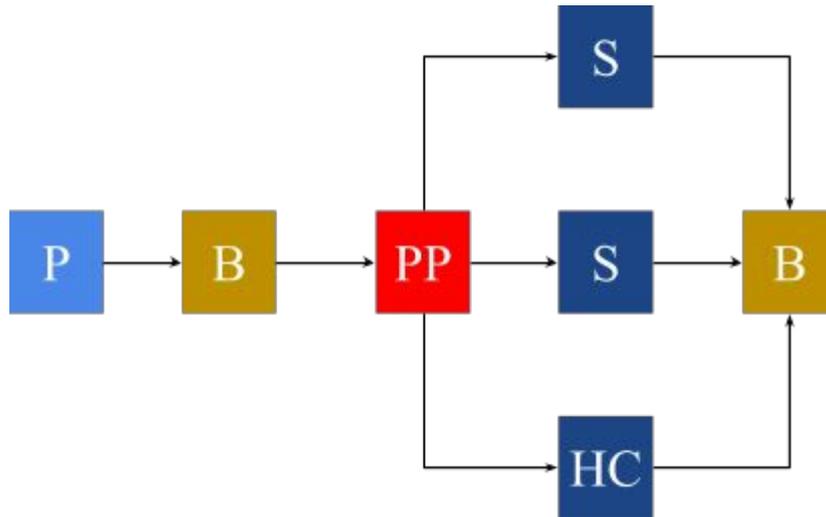
Cost savings accrue from supply chain members not having to chase payment or having to finance lengthy credit periods. Smart contracts eliminate payment disputes and the costs associated with them. They also help the supply chain concentrate on the job in hand and reinforce or facilitate team working.

In general a web payments platform to process payments would work in the following format:

1. Head contractor and Principal agree the contract terms and conditions and agree to use the web payment platform to process payments;

2. When first payment is due Principal pays through the web payments platform;
3. Platform/bank converts payment into cryptocurrencies;
4. Payment follows through to head contractors, subcontractors and suppliers accordingly to progress claim submitted; and
5. Upon payment the parties involved can convert the cryptocurrency into a local currency, such as Australian dollars.

The diagram below further illustrates the steps mentioned above:



Legend: P - Principal, B - Financial Institution, PP - Payment Platform, S - Subcontractor, HC - Head Contractor

### **THE BENEFITS**

Research indicates that on a typical \$10m, 52 week project with 16 subcontractors, savings in the region of 1% - 2.5% could accrue from using a web payments platform. These savings could rise over time if the supply chain were able to reduce overheads relating to debt chasing and administration. Furthermore, greater productivity and a reduction in construction disputes, as well as supply chain failures, although difficult to quantify, are likely to be substantial. The following is a list of direct benefits:

1. Relative small costs to process - as mentioned before smart contracts are self executable. Once payments are made there are no admin costs to redistribute the funds down the supply chain.
2. Compliance with the current legislation - it is statutory obligation for a head contractor to pay their subcontractors and suppliers on time. A web payments platform would leave an audit trail and promote transparency.
3. Effective mitigation of risks associated to payment delay and associated costs - a web payments platform would protect head contractors, subcontractors, and suppliers from withheld or late payments; but most importantly
4. Reduction of the risk of supply chain failure - as payments would carry instructions to follow through between contracts, safeguarding subcontractors and suppliers from the insolvency of the head contractor.

### **ECOSYSTEM**

Communication is the key to success. Any tool that enhances communication has profound effects in the nature of that business going forward. A web payments platform using smart contracts would be a platform that would allow payments to be processed but at the same time interact with any transaction.

The benefits generated by a web payments platform would allow for the creation of a sustainable ecosystem, which among other possibilities, would pave the road for the following to happen:

1. Integrate with other services
2. Consolidate a fragmented industry
3. Create a construction database to:
  - a. Accurately estimate the cost of a particular project
  - b. Variations and disputes approved at the speed of thought.

## **SUMMARY**

Payments have always been one of the main causes of failure in the construction industry despite efforts from governments in Australia to change this. We believe that the creation of a web payments platform using smart contracts and cryptocurrencies would allow the industry to build a truly secure payment system.

A web payments platform could also help to consolidate a fragmented industry, integrate with other services, and build a powerful construction database. Although smart contracts technology is still embryonic, the opportunity to protect the parties from insolvency and late payments is a fight worth fighting for.

## **RECOMMENDATIONS**

This white paper recommends the creation of a working group, to research and test the implementation of smart contracts in the construction industry. At the same time we will seek the endorsement of the Property Council and the backing of a financial institution.