

'Tokenisation' of infrastructure assets

Blockchain could open market to new and wide pool of investors

by Mitchell Chan and Darius Sit in Singapore

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A large funding gap exists in the infrastructure space. Available funding covers only 10% of sanctioned projects (around \$730bn per year), while 90% of financing for Asian infrastructure projects comes from the public sector.

Private sector participation has been prescribed as a remedy for the funding shortfall – but this solution demands a supportive framework to make the assets more tradable and palatable to investors. The 'tokenisation' of assets through blockchain technology can play an important role in developing this framework.

Blockchain is essentially a ledger, a copy of which is owned by every participant in a network, and into which new entries are entered only through majority consensus. This ensures transparency, security and immutability – three crucial characteristics for investor confidence.

These characteristics reduce, or completely remove in some cases, the need for intermediaries, leading to significant time and cost savings. Placing securities onto the blockchain would turn them into 'tokens': digital representations of the securities that exist only on the blockchain. They would be backed by the full faith and collateral of the infrastructure assets underlying them. Tokens are today's digital asset-backed security.

These tokens' digital nature allows for securities to be divided into as small a unit as needed. Bitcoin prices, for example, are listed to 18 decimal places. When these tokens are offered on the internet or through smartphones, the pool of potential investors greatly increases. Since tokens can bypass traditional cross-border restrictions and be traded globally among a large investor base, they become a super-liquid investment for raising infrastructure capital and for promoting financial inclusion.

Analysts increasingly view blockchain and tokenisation as being among the most disruptive technologies in decades. This has been especially true for venture capital fundraising. Token generation events and initial coin offerings raised more than \$4bn in 2017, a marked jump from the \$265m raised between 2014-16. This trend is not slowing; 2018's figures already show year-to-date funding of \$3.4bn.

Digitising infrastructure projects through the blockchain would enable the recording of data in detail and with full transparency. At the same time, tokenisation enables the fractionalisation of ownership. Blockchains track individual ownership rights and allow them to be publicly verified. Those rights become extremely transferable. Moreover, smart contracts (self-executing contracts that run on blockchains) will reduce the time, complexity and paperwork required for deal execution and settlement.

Tokens can also be used to incentivise independent parties to rate – or perhaps even validate – infrastructure asset structures. A token-curated registry could also be used to rank infrastructure assets by having the parties who evaluate the assets stake tokens that are bound to their own rating assessment.

These factors would greatly expand the investor base for infrastructure projects, just as they did for venture capital fundraising. Tokenisation would provide access to infrastructure projects for large segments of the private sector that are hungry for quality investments but were previously unable to participate.

The case for tokenising infrastructure is a good one, particularly with regard to resolving issues of instrumentation, exchanges and liquidity for projects. But blockchain is not a technological panacea. There remain questions about governance and how a large framework would best manage valuation and risks. Attempting such a shift in infrastructure financing would probably benefit from government involvement in the early stages, if only to reassure investors about regulatory compliance and the enforceability of securities based on smart contracts. Such circumstances would favour jurisdictions with strong governance and adherence to the rule of law.

Singapore is ideally placed to develop this model of financing as part of its aspiration to become a global blockchain and infrastructure financing hub, particularly in the light of recent policy announcements that

public bodies can now issue infrastructure project bonds. It is exciting, too, that the Centre for Asset Management Research & Investments at the National University of Singapore is working with asset managers to explore the securitisation of infrastructure assets on the blockchain.

Such early moves are a significant step towards democratising and opening potentially lucrative infrastructure assets to a host of new investors, including retail investors, while creating new opportunities for more infrastructure capital fundraising and investment in developing nations.

Darius Sit is Founder and Managing Partner of QCP Capital, a global proprietary trading firm of digital assets. Mitchell Chan is a Senior Analyst at JL Capital, a Singapore-based hedge fund. Both are graduates of the CAMRI Student Managed Fund Track at NUS Business School, and wrote this article as part of the [CAMRI Infrastructure Finance Initiative](#).