

Business

Fintech

Blockchain

Bitcoin

# Qtum is building bridges between Bitcoin, Ethereum, Hyperledger, R3 Corda ...

■ Qtum is backed by OkCoin CEO Star Xu, Ethereum's Anthony Di Iorio, Augur's Jeremy Gardner and blockchain advocate Bo Shen.

By Ian Allison

February 9, 2017 14:35 GMT

The Qtum platform is using the building blocks of Bitcoin to connect to Ethereum's smart contract engine. Qtum (pronounced Quantum) uses the Unspent transaction Output (UTXO) design of Bitcoin and connects that with the Ethereum Virtual Machine (EVM) which stores and executes business rules as code on the blockchain.

A blockchain based on UTXO architecture that can somehow incorporate Ethereum's smart contract capabilities would offer a bridge between those two ecosystems, as well as connect with other UTXO blockchains like Hyperledger and R3's Corda platform.

Bitcoin's UTXO design, which works by consuming unspent transaction outputs created by previous transactions, allows transactions to be processed in parallel, with the potential to scale. But doing smart contracts in a context like Ethereum, which is designed around accounts, is tricky because UTXOs are stateless, and are not well-suited to applications more complex than asset issuance and transfer. Smart contracts that operate in phases, have multiple parties, data feeds etc, do not mesh with UTXO designed systems.

Why advertise with us

Qtum's founder Patrick Dei says he has addressed this by creating the Qtum Account Abstraction Layer (AAL). Dei, who dropped out of his PhD at a prestigious Chinese science

university to concentrate on the project, agreed that using UTXO and the EVM is complex.

He said: "What we have built is like an adapter. We can build the state of each UTXO and through the new layer, we can adapt it to the EVM, so the EVM can process the UTXO-based contract. So we have created some new stuff. This new layer works for all UTXO-based blockchains like Bitcoin, Litecoin, even Hyperledger and R3 Corda."

Dei explained that he spent a lot of time at last year's Blockchain Summit in Shanghai, discussing the project with members of the Hyperledger Project. "Hyperledger was very interested in the Qtum design," said Dei. "They can also use this adapter with Hyperledger and get smart contract ability from the EVM. We designed the Qtum account abstraction layer to be an adapter for all the UTXO family so they can use the EVM to build smart contracts."

Regarding the complexity of smart contracts involving multiple parties, Dei said: "The Qtum AAL you can have multi-input in parallel from the UTXO model. But the output right now is limited by the EVM, because the EVM output is one output address."

"So we wanted to extend the EVM in the future to support multi-input and multi-output even in a contract transaction. In Qtum we distinguish a normal transaction and a contract transaction. So if you are just doing a normal transaction like send from one address to another, then everything is similar like in Bitcoin. If you don't use a contract you have the ability to parallel process a transaction."

Qtum uses a proof-of-stake (PoS) system based on an original proposal by Sunny King who created Peercoin, with some added incentives. "With the classic PoS protocol you are facing a lot of attack vectors and attack potential. So in Qtum we created some incentives within PoS; we wanted to incentive all the small nodes so they can keep online to maintain the network."

"We have a yellow paper which we are going to publish soon. We are based on PoS 3.0. It will be ready before Ethereum Casper."

"I thought about doing something completely new from scratch but it would take a year or two to do the testing. For that reason we chose the Bitcoin source code as the main source code of Qtum."

"After we release the mainnet, another direction we wanted to do is sidechains. I feel like sidechains is a good way to scale; you don't need to put all the useless smart contracts on the main blockchain. It's a waste of resources," he said.

A press release stated that Singapore-based Qtum is working with one of the big four professional services firms (not yet released) and has already surpassed \$1m in angel backing from top blockchain evangelists, academics, venture capitalists, and technologists. These include Kuaidi founder, Chen Weixing; OkCoin CEO, Star Xu; founder of Ethereum and Jaxx Blockchain Interface, Anthony Di Iorio; cofounder of the AugurProject, Jeremy Gardner; blockchain technology advocate, Bo Shen; and Chinese angel investor, Xiaolai Li.